United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Virginia Polytechnic
Institute and State
University

Soil Survey of King William County, Virginia

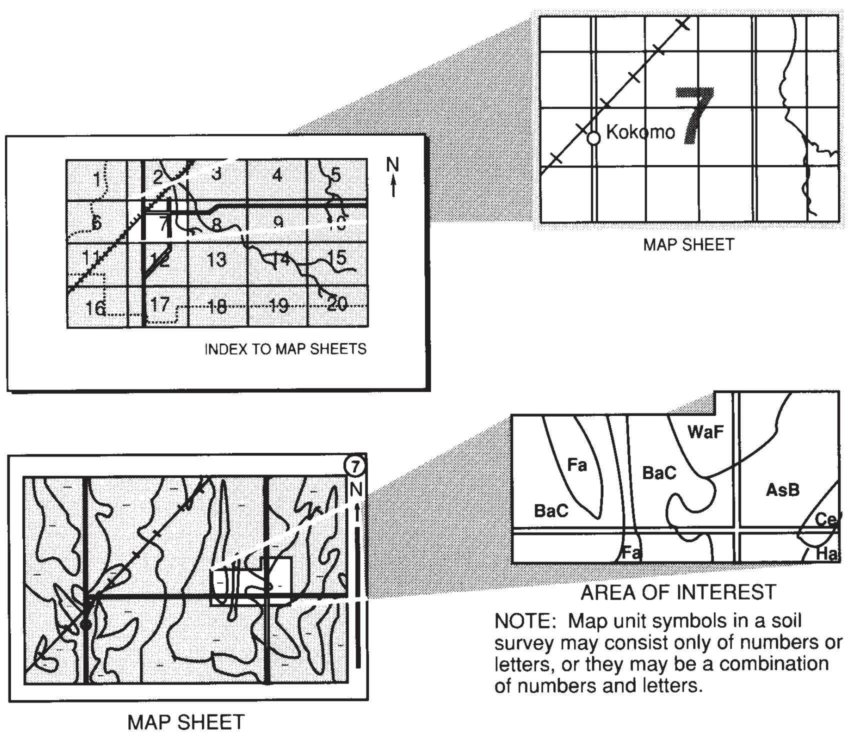
How To Use This Soil Survey

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and go to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1990. Soil names and descriptions were approved in 1995. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1995. The most current official data are available at http://websoilsurvey.nrcs.usda.gov/app/. This survey was made cooperatively by the Natural Resources Conservation Service and the Virginia Polytechnic Institute and State University. The Virginia Department of Conservation and Recreation and the King William County Board of Supervisors provided financial assistance for the survey. The survey is part of the technical assistance furnished to the Three Rivers Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued 2007

Foreword

This soil survey contains information that affects land use planning in King William County. It includes predictions of soil behavior for selected land uses. The survey highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, foresters, and agronomists can use the survey to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

John A. Bricker
State Conservationist
Natural Resources Conservation Service

Soil Survey of
King William County, Virginia

By Michael E. Newhouse, Virginia Polytechnic Institute and State University, and Pamela J. Thomas, Natural Resources Conservation Service

Fieldwork by Michael E. Newhouse and Larry F. Baldwin, Virginia Polytechnic Institute and State University

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
Virginia Polytechnic Institute and State University

KING WILLIAM COUNTY is in the east-central region of Virginia, in an area along the York River locally known as the Middle Peninsula (fig. 1). It has an area of 182,800 acres, or about 286 square miles. King William Court House, located in the central part of the county, is the county seat. West Point, located at the eastern edge of the survey area, is an independent town. In 2000, the population of the county, including West Point, was approximately 13,150 *(18)*.

General Nature of the Survey Area

This section provides general information about King William County. It describes the physiography, relief, and drainage of the survey area and the climate.

Physiography, Relief, and Drainage

King William County is in the Southern Coastal Plain physiographic province, in an area known locally as the Middle Peninsula. Elevation ranges from sea level, at West Point, to about 200 feet above sea level, at the Caroline County line.

The western one-fifth of the county, along the Pamunkey River, consists mainly of well drained and moderately well drained loamy soils on flat river terraces that include many tidal creeks and marshes. The eastern one-fifth of the county, along the Mattaponi River, consists mainly of well drained and moderately well drained sandy soils on flat river terraces that include many tidal creeks and marshes. The central three-fifths of the county, in an area extending from about 3 miles north of West Point to the Caroline County line, generally consist mainly of uplands that have a highly dissected, dendritic drainage pattern.

Streams generally drain east and west from Highway VA-30 to the two major rivers. Long and steep side slopes extend to the lower terraces. In areas of these terraces, the escarpments and side slopes are generally short and steep. The streams and creeks flowing into the Mattaponi and Pamunkey Rivers are generally small, and many are influenced by tidal action. The marshes near West Point are saline. Near Highway US-360, they are brackish and freshwater.

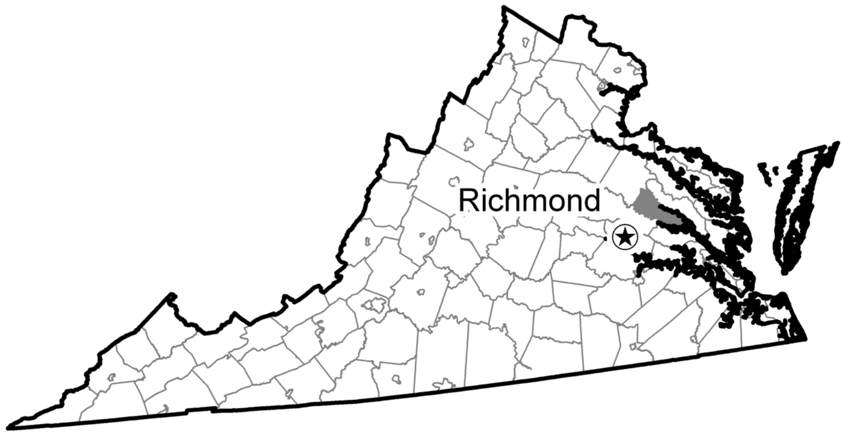


Figure 1.—Location of King William County in Virginia.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Walkerton, Virginia, in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 39.1 degrees F and the average daily minimum temperature is 28.1 degrees. The lowest temperature on record, which occurred on January 28, 1987, is -12 degrees. In summer, the average temperature is 75.9 degrees and the average daily maximum temperature is 86.9 degrees. The highest recorded temperature, which occurred on September 11, 1983, is 102 degrees.

Growing degree days are shown in the table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 43.65 inches. Of this, 26.03 inches, or about 60 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 7.75 inches, recorded on September 16, 1999. Thunderstorms occur on about 32 days each year, and most occur in July.

The average seasonal snowfall is 11.1 inches. The greatest snow depth at any one time during the period of record was 15 inches, recorded on January 25, 2000. On the average, 9 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year. The heaviest 1-day snowfall on record was 14 inches, recorded on January 8, 1996.

The average relative humidity in midafternoon is about 51 percent. Humidity is higher at night, and the average at dawn is about 81 percent. The sun shines 72 percent of the time possible in summer and 56 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 9.1 miles per hour, in March.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations,

and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the

survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Detailed Soil Map Units

The map units delineated on the detailed soil maps represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis

of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Emporia fine sandy loam, 2 to 6 percent slopes, is a phase of the Emporia series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are undifferentiated groups. An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Suffolk and Rumford soils, 2 to 6 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Water is an example.

Table 4 lists the map units in this survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

1A—Altavista loamy sand, 0 to 2 percent slopes, rarely flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 110 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Altavista and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 12 inches—brown loamy sand

Subsurface layer:
12 to 16 inches—light yellowish brown loamy sand

Subsoil:
16 to 20 inches—yellowish brown sandy loam
20 to 34 inches—yellowish brown sandy clay loam
34 to 40 inches—brownish yellow sandy loam; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
40 to 65 inches—brownish yellow sand; light gray iron depletions

Minor Components

Dissimilar components:
- Bojac and State soils, which are well drained; in landscape positions not subject to flooding

- Munden soils, which have less clay than the Altavista soil; in landscape positions not subject to flooding
- Tomotley soils, which are poorly drained; in the more linear or concave landscape positions that are not subject to flooding

Similar components:
- Soils that have more silt than the Altavista soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

- This soil is well suited to corn, soybeans, wheat, and grass-legume hay.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: B
Hydric soil: No

1B—Altavista fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 110 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Altavista and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 12 inches—brown fine sandy loam

Subsurface layer:
12 to 16 inches—light yellowish brown fine sandy loam

Subsoil:
16 to 20 inches—yellowish brown fine sandy loam
20 to 34 inches—yellowish brown sandy clay loam
34 to 40 inches—brownish yellow sandy loam; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
40 to 65 inches—brownish yellow sand; light gray iron depletions

Minor Components

Dissimilar components:
- Bojac and State soils, which are well drained; in convex areas
- Munden soils, which have less clay than the Altavista soil; in similar landscape positions
- Tomotley soils, which are poorly drained; in the more linear or concave landscape positions

Similar components:
- Soils that have more silt than the Altavista soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: B
Hydric soil: No

2A—Bama loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 20 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Bama and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown loam

Subsurface layer:
4 to 13 inches—light yellowish brown loam

Subsoil:
13 to 19 inches—strong brown loam; pale brown iron depletions
19 to 26 inches—yellowish red loam; pale brown iron depletions
26 to 50 inches—yellowish red sandy clay loam; red masses of oxidized iron
50 to 70 inches—yellowish red sandy clay loam; pink masses of oxidized iron

Minor Components

Dissimilar components:
- Eulonia soils, which are moderately well drained and have more clay in the subsoil than the Bama soil; in the more linear or concave landscape positions

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Bama soil
- Kempsville soils, which have a decrease in clay content within a depth of 60 inches; in landscape positions similar to those of the Bama soil
- Slagle soils, which are moderately well drained and have gray iron depletions in the upper part of the subsoil; in the more linear or concave landscape positions
- Suffolk soils, which have a solum that is thinner that that of the Bama soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: R
Hydric soil: No

2B—Bama loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 20 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Bama and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown loam

Subsurface layer:
4 to 13 inches—light yellowish brown loam

Subsoil:
13 to 19 inches—strong brown loam; pale brown iron depletions
19 to 26 inches—yellowish red loam; pale brown iron depletions
26 to 50 inches—yellowish red sandy clay loam; red masses of oxidized iron
50 to 70 inches—yellowish red sandy clay loam; pink masses of oxidized iron

Minor Components

Dissimilar components:
- Eulonia soils, which are moderately well drained and have more clay in the subsoil than the Bama soil; in the more linear or concave landscape positions

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Bama soil
- Kempsville soils, which have a decrease in clay content within a depth of 60 inches; in landscape positions similar to those of the Bama soil
- Slagle soils, which are moderately well drained and have gray iron depletions in the upper part of the subsoil; in the more linear or concave landscape positions
- Suffolk soils, which have a solum that is thinner than that of the Bama soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: R
Hydric soil: No

3A—Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Flood plain on coastal plain
Position on the landform: Low linear or concave surfaces
Size of areas: 2 to 15 acres
Shape of areas: Oval or irregular

Map Unit Composition

Bibb and similar soils: Typically 45 percent, ranging from about 35 to 45 percent
Kinston and similar soils: Typically 40 percent, ranging from about 35 to 45 percent

Typical Profile

Bibb

Surface layer:
0 to 4 inches—grayish brown loamy sand
4 to 15 inches—grayish brown loamy sand; gray iron depletions and yellowish red masses of oxidized iron

Substratum:
15 to 42 inches—gray sandy loam; yellowish brown masses of oxidized iron
42 to 65 inches—gray loamy sand; yellowish brown masses of oxidized iron

Kinston

Surface layer:
0 to 8 inches—dark grayish brown fine sandy loam

Subsoil:
8 to 21 inches—gray fine sandy loam; dark yellowish brown masses of oxidized iron
21 to 43 inches—gray sandy clay loam; yellowish brown masses of oxidized iron

Substratum:
43 to 65 inches—gray loamy sand

Minor Components

Dissimilar components:
- Myatt soils, which have a regular increase and decrease in clay content; on low stream terrace treads

Soil Properties and Qualities

Available water capacity: Bibb—moderate (about 6.7 inches); Kinston—moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: Bibb—about 6 to 12 inches; Kinston—about 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pasture

Suitability: Moderately suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- Flooding may result in damage to haul roads.

- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Bibb—5w; Kinston—6w
Virginia soil management group: Bibb—EE; Kinston—OO
Hydric soils: Yes

4A—Bohicket silty clay loam, 0 to 1 percent slopes, very frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Tidal marsh on coastal plain
Position on the landform: Flood plains
Size of areas: 3 to more than 100 acres
Shape of areas: Long and winding or very broad

Map Unit Composition

Bohicket and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 8 inches—gray silty clay loam

Substratum:
8 to 29 inches—dark greenish gray silty clay loam
29 to 65 inches—dark greenish gray silty clay

Minor Components

Dissimilar components:
- Wehadkee soils, which are poorly drained and are not subject to daily inundation by tidal water; in the slightly higher landscape positions on flood plains

Similar components:
- Lanexa and Mattan soils, which have organic material over mineral sediments; in landscape positions inundated by fresh or brackish tidal waters

Soil Properties and Qualities

Available water capacity: Moderate (about 7.8 inches)
Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Drainage class: Very poorly drained
Depth to seasonal water saturation: About 0 inches
Water table (kind): Apparent
Flooding hazard: Very frequent
Ponding hazard: Frequent
Depth of ponding: 0.0 to 3.0 feet
Shrink-swell potential: High
Runoff class: Negligible
Parent material: Loamy and clayey alluvial sediments

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pasture

- This soil is unsuited to pastureland.

Woodland

- Flooding may result in damage to haul roads.
- Flooding and ponding restrict the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Flooding and ponding are limitations affecting building site development.

Septic tank absorption fields

- Flooding and ponding are limitations affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 8w
Virginia soil management group: PP
Hydric soil: Yes

5A—Bojac gravelly loamy sand, 0 to 2 percent slopes, rarely flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 50 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Bojac and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 6 inches—light yellowish brown gravelly loamy sand

Subsurface layer:
6 to 12 inches—yellowish brown gravelly sandy loam

Subsoil:
12 to 40 inches—strong brown gravelly fine sandy loam
40 to 46 inches—reddish yellow gravelly fine sandy loam

Substratum:
46 to 65 inches—very pale brown gravelly fine sand

Minor Components

Dissimilar components:
- Tarboro soils, which are somewhat excessively drained and sandy throughout; in the slightly higher landscape positions
- Tomotley soils, which are poorly drained; in linear or concave landscape positions

Similar components:
- Munden soils, which are moderately well drained; in concave landscape positions
- Soils that have less gravel throughout; in landscape positions similar to those of the Bojac soil

Soil Properties and Qualities

Available water capacity: Low (about 5.7 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy and gravelly fluvial sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans

- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and sweetgum
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2s
Virginia soil management group: DD
Hydric soil: No

6A—Bojac fine sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 40 acres
Shape of areas: Broad and irregular

Map Unit Composition

Bojac and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 6 inches—light yellowish brown fine sandy loam

Subsurface layer:
6 to 12 inches—yellowish brown fine sandy loam

Subsoil:
12 to 40 inches—strong brown fine sandy loam
40 to 46 inches—reddish yellow fine sandy loam

Substratum:
46 to 65 inches—very pale brown fine sand

Minor Components

Dissimilar components:
- Seabrook soils, which are somewhat excessively drained and sandy throughout; in landscape positions similar to those of the Bojac soil
- Tarboro soils, which are somewhat excessively drained and sandy throughout; in the slightly higher landscape positions
- Tomotley soils, which are poorly drained; in linear or concave landscape positions

Similar components:
- Conetoe soils, which have thick sandy surface horizons; in landscape positions similar to those of the Bojac soil
- Munden soils, which are moderately well drained; in linear or concave landscape positions
- State soils, which have more clay in the subsoil than the Bojac soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

- This soil is well suited to the production of wheat and grass-legume hay, moderately suited to the production of corn, and poorly suited to the production of soybeans.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: DD
Hydric soil: No

6B—Bojac fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 40 acres
Shape of areas: Broad and irregular

Map Unit Composition

Bojac and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 6 inches—light yellowish brown fine sandy loam

Subsurface layer:
6 to 12 inches—yellowish brown fine sandy loam

Subsoil:
12 to 40 inches—strong brown fine sandy loam
40 to 46 inches—reddish yellow fine sandy loam

Substratum:
46 to 65 inches—very pale brown fine sand

Minor Components

Dissimilar components:
- Seabrook soils, which are somewhat excessively drained and sandy throughout; in landscape positions similar to those of the Bojac soil
- Tarboro soils, which are somewhat excessively drained and sandy throughout; in the slightly higher landscape positions
- Tomotley soils, which are poorly drained; in linear or concave landscape positions

Similar components:
- Conetoe soils, which have thick sandy surface horizons; in landscape positions similar to those of the Bojac soil
- Munden soils, which are moderately well drained; in linear or concave landscape positions
- State soils, which have more clay in the subsoil than the Bojac soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)

Drainage class: Well drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn; poorly suited to soybeans
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: DD
Hydric soil: No

7A—Catpoint sand, 0 to 4 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 5 to 10 acres
Shape of areas: Elongated and parallel to large streams and drainageways

Map Unit Composition

Catpoint and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—very dark gray sand

Subsoil:
5 to 49 inches—yellowish brown sand

Subsurface layer:
49 to 72 inches—very pale brown, yellowish brown, and strong brown sand

Minor Components

Dissimilar components:
- Eunola soils, which are moderately well drained and have more clay in the subsoil than the Catpoint soil; in the lower linear or concave landscape positions
- Kenansville soils, which are well drained and have thick sandy surface horizons over a loamy subsoil; in landscape positions similar to those of the Catpoint soil
- Osier soils, which are poorly drained; in linear or concave landscape positions

Similar components:
- Pactolus soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 3.5 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to wheat; poorly suited to corn and soybeans
- Because of the limited available water capacity, plants may suffer from moisture stress.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Poorly suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Moderately suited to loblolly pine and sweetgum
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3s
Virginia soil management group: II
Hydric soil: No

8A—Conetoe loamy fine sand, 0 to 4 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 10 acres
Shape of areas: Elongated or irregularly oblong

Map Unit Composition

Conetoe and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loamy fine sand

Subsurface layer:
6 to 20 inches—light yellowish brown fine sand
20 to 29 inches—light yellowish brown loamy fine sand

Subsoil:
29 to 52 inches—brownish yellow sandy loam
52 to 58 inches—brownish yellow loamy fine sand

Substratum:
58 to 80 inches—very pale brown fine sand

Minor Components

Dissimilar components:
- Bojac soils, which are loamy throughout; in landscape positions similar to those of the Conetoe soil
- Munden soils, which are moderately well drained and loamy throughout; in the lower linear or concave landscape positions
- Seabrook soils, which are moderately well drained and sandy throughout; in the lower linear or concave landscape positions
- Tarboro soils, which are somewhat excessively drained and sandy throughout; in landscape positions similar to those of the Conetoe soil

Soil Properties and Qualities

Available water capacity: Low (about 5.8 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Sandy and loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn; poorly suited to soybeans
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2s
Virginia soil management group: DD
Hydric soil: No

9A—Daleville silt loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Broad flats on uplands
Size of areas: 3 to 10 acres
Shape of areas: Rectangular or irregularly oval

Map Unit Composition

Daleville and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown silt loam; yellowish brown masses of oxidized iron

Subsoil:
5 to 15 inches—light brownish gray loam; yellowish brown masses of oxidized iron
15 to 29 inches—gray clay loam; yellowish brown masses of oxidized iron
29 to 44 inches—gray sandy clay loam; yellowish brown masses of oxidized iron
44 to 65 inches—light gray sandy clay loam; yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Eulonia soils, which are moderately well drained; in the slightly higher linear or convex landscape positions

Similar components:
- Myatt soils, which are poorly drained and have a decrease in clay content with increasing depth; in landscape positions similar to those of the Daleville soil
- Slagle soils, which are moderately well drained; in the slightly higher linear or convex landscape positions
- Soils that are subject to ponding; in concave landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat; not suited to grass-legume hay
- The risk of compaction increases when the soil is wet.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Poorly suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 4w
Virginia soil management group: OO
Hydric soil: Yes

10A—Emporia fine sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 40 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Emporia and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—light brownish gray fine sandy loam

Subsurface layer:
3 to 16 inches—brown loam

Subsoil:
16 to 21 inches—brownish yellow and light yellowish brown loam
21 to 28 inches—yellowish brown loam; strong brown masses of oxidized iron
28 to 45 inches—light yellowish brown sandy clay loam; very pale brown iron depletions and yellowish red masses of oxidized iron
45 to 55 inches—brownish yellow sandy clay loam; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
55 to 80 inches—strong brown and red clay loam; light gray iron depletions

Minor Components

Similar components:
- Bama, Kempsville, and Suffolk soils, which do not have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Emporia soil
- Slagle soils, which are moderately well drained; in concave landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 36 to 54 inches
Water table (kind): Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

- This soil is well suited to the production of soybeans, peanuts, wheat, and grass-legume hay and moderately suited to the production of corn.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability is a limitation affecting the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- The low soil strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: R
Hydric soil: No

10B—Emporia fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 40 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Emporia and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—light brownish gray fine sandy loam

Subsurface layer:
3 to 16 inches—brown loam

Subsoil:
16 to 21 inches—brownish yellow and light yellowish brown loam
21 to 28 inches—yellowish brown loam; strong brown masses of oxidized iron
28 to 45 inches—light yellowish brown sandy clay loam; very pale brown iron depletions and yellowish red masses of oxidized iron
45 to 55 inches—brownish yellow sandy clay loam; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
55 to 80 inches—strong brown and red clay loam; light gray iron depletions

Minor Components

Similar components:
- Bama, Kempsville, and Suffolk soils, which do not have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Emporia soil
- Slagle soils, which are moderately well drained; in concave landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 36 to 54 inches
Water table (kind): Perched

Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, peanuts, wheat, and grass-legume hay; moderately suited to corn
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- Because of the restricted permeability, the absorption and proper treatment of the effluent from conventional septic systems is limited.

Local roads and streets

- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- The low soil strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: R
Hydric soil: No

11A—Eulonia fine sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 2 to 15 acres
Shape of areas: Irregularly rectangular or irregularly oval

Map Unit Composition

Eulonia and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown fine sandy loam

Subsoil:
7 to 17 inches—yellowish brown clay; yellowish red masses of oxidized iron
17 to 24 inches—yellowish brown clay; yellowish red masses of oxidized iron and light brownish gray iron depletions
24 to 31 inches—brownish yellow sandy clay; light gray iron depletions
31 to 45 inches—light gray sandy clay loam; brownish yellow and strong brown masses of oxidized iron

Substratum:
45 to 60 inches—brownish yellow sandy loam; light gray iron depletions
60 to 75 inches—yellowish brown and brownish yellow sandy loam; light gray iron depletions

Minor Components

Dissimilar components:
- Emporia and Kempsville soils, which are well drained; in the higher convex landscape positions
- Daleville and Myatt soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Slagle soils, which are moderately well drained and have less clay in the subsoil than the Eulonia soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 42 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Clayey and loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, wheat, and grass-legume hay; poorly suited to soybeans
- The high clay content restricts the rooting depth of crops.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.
- Because of the restricted permeability, the absorption and proper treatment of the effluent from conventional septic systems is reduced.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: HH
Hydric soil: No

11B—Eulonia fine sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 2 to 15 acres
Shape of areas: Irregularly rectangular or irregularly oval

Map Unit Composition

Eulonia and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown fine sandy loam

Subsoil:
7 to 17 inches—yellowish brown clay; yellowish red masses of oxidized iron
17 to 24 inches—yellowish brown clay; yellowish red masses of oxidized iron and light brownish gray iron depletions
24 to 31 inches—brownish yellow sandy clay; light gray iron depletions
31 to 45 inches—light gray sandy clay loam; brownish yellow and strong brown masses of oxidized iron

Substratum:
45 to 60 inches—brownish yellow sandy loam; light gray iron depletions
60 to 75 inches—yellowish brown and brownish yellow sandy loam; light gray iron depletions

Minor Components

Dissimilar components:
- Emporia and Kempsville soils, which are well drained; in the higher convex landscape positions
- Daleville and Myatt soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Slagle soils, which are moderately well drained and have less clay in the subsoil than the Eulonia soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 42 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Clayey and loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, wheat, and grass-legume hay; poorly suited to soybeans
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- The high clay content restricts the rooting depth of crops.

Pasture

- This soil is well suited to pasture.
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

- Because of the restricted permeability, the absorption and proper treatment of the effluent from conventional septic systems is restricted.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: HH
Hydric soil: No

12A—Eunola sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear or concave treads
Size of areas: 2 to 110 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Eunola and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown sandy loam

Subsoil:
10 to 25 inches—brownish yellow sandy loam
25 to 35 inches—yellowish brown sandy clay loam; light brownish gray iron depletions and very pale brown masses of oxidized iron
35 to 55 inches—brownish yellow sandy clay loam; light brownish gray iron depletions

Substratum:
55 to 65 inches—light gray sandy loam; strong brown and very pale brown masses of oxidized iron

Minor Components

Dissimilar components:

- Myatt soils, which are poorly drained and have less clay in the subsoil than the Eulonia soil; in the lower linear or concave area of treads

Similar components:

- Nansemond soils, which have less clay in the subsoil than the Eulonia soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)

Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Clayey and loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- The excessive permeability increases the risk of ground-water contamination.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to yellow-poplar and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: T
Hydric soil: No

12B—Eunola sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear or concave treads
Size of areas: 2 to 110 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Eunola and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsurface layer:
5 to 10 inches—yellowish brown sandy loam

Subsoil:
10 to 25 inches—brownish yellow sandy loam
25 to 35 inches—yellowish brown sandy clay loam; light brownish gray iron depletions and very pale brown masses of oxidized iron
35 to 55 inches—brownish yellow sandy clay loam; light brownish gray iron depletions

Substratum:
55 to 65 inches—light gray sandy loam; strong brown and very pale brown masses of oxidized iron

Minor Components

Dissimilar components:
- Myatt soils, which are poorly drained and have less clay in the subsoil than the Eunola soil; in the lower linear or concave areas of treads

Similar components:
- Nansemond soils, which have less clay in the subsoil than the Eunola soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Clayey and loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, grass-legume hay; moderately suited to corn
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- The excessive permeability increases the risk of ground-water contamination.

Pasture

Suitability: Well suited to pasture
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to yellow-poplar and sweetgum

- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of this soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: T
Hydric soil: No

13A—Kempsville sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 60 acres
Shape of areas: Elongated, irregularly rectangular, or oval

Map Unit Composition

Kempsville and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown sandy loam

Subsurface layer:
3 to 18 inches—yellowish brown sandy loam

Subsoil:
18 to 36 inches—strong brown loam; very pale brown iron depletions
36 to 44 inches—yellowish red sandy clay loam; light yellowish brown iron depletions
44 to 60 inches—light yellowish brown and yellowish red sandy clay loam; pale brown iron depletions

60 to 64 inches—strong brown sandy loam; pink iron depletions
64 to 80 inches—strong brown sandy clay loam; red and reddish yellow masses of oxidized iron

Minor Components

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Kempsville soil
- Slagle soils, which are moderately well drained; in linear or concave landscape positions
- Suffolk soils, which do not have iron depletions and accumulations; in landscape positions similar to those of the Kempsville soil

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

- This soil is well suited to the production of soybeans, wheat, and grass-legume hay and moderately suited to the production of corn.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, yellow-poplar, and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- This soil is well suited to building site development.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: S
Hydric soil: No

13B—Kempsville sandy loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 3 to 60 acres
Shape of areas: Elongated, irregularly rectangular, or oval

Map Unit Composition

Kempsville and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown sandy loam

Subsurface layer:
3 to 18 inches—yellowish brown sandy loam

Subsoil:
18 to 36 inches—strong brown loam; very pale brown iron depletions
36 to 44 inches—yellowish red sandy clay loam; light yellowish brown iron depletions
44 to 60 inches—light yellowish brown and yellowish red sandy clay loam; pale brown iron depletions
60 to 64 inches—strong brown sandy loam; pink iron depletions
64 to 80 inches—strong brown sandy clay loam; red and reddish yellow masses of oxidized iron

Minor Components

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Kempsville soil
- Slagle soils, which are moderately well drained; in linear or concave landscape positions
- Suffolk soils, which do not have iron depletions and accumulations; in landscape positions similar to those of the Kempsville soil

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, yellow-poplar, and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- This soil is well suited to building site development.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: S
Hydric soil: No

14A—Kenansville sand, 0 to 4 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terraces and stream terraces
Position on the landform: Uplands
Size of areas: 3 to 10 acres
Shape of areas: Elongated or irregularly oblong

Map Unit Composition

Kenansville and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown sand
3 to 9 inches—brown sand

Subsurface layer:
9 to 34 inches—brownish yellow loamy sand

Subsoil:
34 to 45 inches—strong brown sandy loam

Substratum:
45 to 64 inches—yellowish brown loamy sand
64 to 70 inches—brownish yellow sand

Minor Components

Dissimilar components:
- Catpoint soils, which are sandy throughout; on stream terraces in landscape positions similar to those of the Kenansville soil
- Slagle soils, which are moderately well drained; in linear or concave landscape positions on uplands
- Nansemond soils, which are moderately well drained; in linear or concave landscape positions on stream terraces or uplands
- Pactolus soils, which are moderately well drained and sandy throughout; in linear or concave landscape positions on uplands

Similar components:
- Emporia, Kempsville, and Suffolk soils, which have loamy surface layers; in landscape positions similar to those of the Kenansville soil

Soil Properties and Qualities

Available water capacity: Low (about 3.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy marine or fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to wheat and grass-legume hay; moderately suited to corn; poorly suited to soybeans
- Because of the limited available water capacity, plants may suffer from moisture stress.
- Sandy or coarse textured layers accelerate the rate at which plant nutrients are leached.

Pasture

Suitability: Well suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Moderately suited to loblolly pine
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3s
Virginia soil management group: DD
Hydric soil: No

15A—Lanexa mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Tidal marsh on coastal plain
Position on the landform: Flood plains
Size of areas: 3 to 100 acres or more
Shape of areas: Irregular

Map Unit Composition

Lanexa and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 26 inches—dark gray mucky silty clay loam

Organic layer:
26 to 48 inches—very dark grayish brown muck

Substratum:
48 to 60 inches—very dark grayish brown mucky silty clay
60 to 80 inches—very dark grayish brown mucky silty clay

Minor Components

Dissimilar components:
- Bohicket soils, which have high salinity levels; on the fringes of rivers at the mouths of the Mattaponi and Pamunkey Rivers, where saltwater influence extends upstream
- Wehadkee soils, which are poorly drained mineral soils; on the fringes of stream terraces and at the slightly higher elevations in areas where salinity levels are lower

Similar components:
- Mattan soils, which have loamy subsurface layers; on the fringes of stream terraces and at the slightly higher elevations in areas where salinity levels are lower

Soil Properties and Qualities

Available water capacity: Very high (about 12.9 inches)
Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Drainage class: Very poorly drained
Depth to seasonal water saturation: About 0 inches

Water table (kind): Apparent
Flooding hazard: Very frequent
Ponding hazard: Frequent
Depth of ponding: 0.0 to 2.0 feet
Shrink-swell potential: Moderate
Runoff class: Negligible
Parent material: Herbaceous organic material over clayey alluvial sediments

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pasture

- This soil is unsuited to pastureland.

Woodland

- Flooding may result in damage to haul roads.
- Flooding and ponding restrict the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Flooding and ponding are limitations affecting building site development.

Septic tank absorption fields

- Flooding and ponding are limitations affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7w
Virginia soil management group: PP
Hydric soil: Yes

16A—Mattan mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Swamp on coastal plain
Position on the landform: Flood plains
Size of areas: 3 to 100 acres or more
Shape of areas: Irregular

Map Unit Composition

Mattan and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 14 inches—gray mucky silty clay loam

Organic layer:
14 to 40 inches—very dark grayish brown muck, very dark gray, dry

Substratum:
40 to 48 inches—very dark grayish brown mucky loamy sand
48 to 60 inches—dark gray mucky sandy clay loam
60 to 80 inches—greenish gray sandy clay loam; light olive brown masses of oxidized iron

Minor Components

Dissimilar components:
- Wehadkee soils, which are poorly drained mineral soils; on the fringes of stream terraces and at the slightly higher elevations

Similar components:
- Mattan soils, which have clayey subsurface layers; on the fringes of rivers and at the slightly lower elevations, in areas where salinity levels are higher

Soil Properties and Qualities

Available water capacity: High (about 10.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Very poorly drained
Depth to seasonal water saturation: About 0 inches
Water table (kind): Apparent
Flooding hazard: Very frequent
Ponding hazard: Frequent
Depth of ponding: 0.0 to 2.0 feet
Shrink-swell potential: Low
Runoff class: Negligible
Parent material: Herbaceous and wood organic material and loamy alluvial sediments

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pasture

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to baldcypress
- Flooding may result in damage to haul roads.
- Flooding and ponding restrict the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Flooding and ponding are limitations affecting building site development.

Septic tank absorption fields

- Flooding and ponding are limitations affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7w
Virginia soil management group: PP
Hydric soil: Yes

17A—Munden loamy sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear and concave treads
Size of areas: 2 to 10 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Munden and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—dark grayish brown loamy sand

Subsurface layer:
3 to 13 inches—light yellowish brown loamy sand

Subsoil:
13 to 19 inches—brownish yellow sandy loam
19 to 24 inches—yellowish brown sandy loam
24 to 31 inches—yellowish brown sandy loam; strong brown masses of oxidized iron
31 to 44 inches—yellowish brown sandy loam; light gray iron depletions and yellowish red and very pale brown masses of oxidized iron

Substratum:
44 to 60 inches—yellowish brown and very pale brown sand

Minor Components

Dissimilar components:
- Conetoe soils, which are well drained and have thick sandy surface layers; in convex landscape positions

- Seabrook soils, which are sandy throughout; in landscape positions similar to those of the Munden soil
- Tarboro soils, which are well drained and sandy throughout; in convex landscape positions
- Tomotley soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Bojac soils, which are well drained; in the higher convex landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: F
Hydric soil: No

18A—Myatt loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terraces and stream terraces
Position on the landform: Upland flats
Size of areas: 3 to 10 acres
Shape of areas: Rectangular or irregularly oval

Map Unit Composition

Myatt and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 7 inches—very dark grayish brown loam

Subsurface layer:
7 to 15 inches—dark grayish brown fine sandy loam

Subsoil:
15 to 31 inches—dark gray sandy clay loam; yellowish brown and dark yellowish brown masses of oxidized iron
31 to 40 inches—dark gray sandy clay loam; gray iron depletions

Substratum:
40 to 65 inches—gray coarse sand

Minor Components

Dissimilar components:
- Eunola soils, which are moderately well drained; in the slightly higher linear and concave landscape positions on stream terraces
- Nansemond soils, which are moderately well drained and have less clay in the subsoil than the Myatt soil; in the slightly higher linear and concave landscape positions on stream terraces and uplands
- Osier soils, which are sandy throughout; on stream terraces in landscape positions similar to those of the Myatt soil
- Slagle soils, which are moderately well drained; in the slightly higher linear or concave landscape positions on uplands

Similar components:
- Daleville soils, which do not have a decrease in clay content within a depth of 60 inches; on uplands in landscape positions similar to those of the Myatt soil
- Soils that are subject to ponding; in concave landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Drainage class: Poorly drained

Depth to seasonal water saturation: About 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Parent material: Loamy marine or fluvial sediments

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat; not suited to grass-legume hay
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Poorly suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to sweetgum
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 4w
Virginia soil management group: OO
Hydric soil: Yes

19A—Nansemond loamy fine sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terraces and stream terraces
Position on the landform: Uplands and linear and concave treads
Size of areas: 2 to 20 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Nansemond and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 8 inches—dark grayish brown loamy fine sand

Subsurface layer:
8 to 16 inches—yellowish brown loamy fine sand

Subsoil:
16 to 28 inches—yellowish brown sandy loam
28 to 42 inches—yellowish brown sandy loam; very pale brown masses of oxidized iron and light gray iron depletions

Substratum:
42 to 60 inches—yellowish brown loamy sand; light gray iron depletions and very pale brown masses of oxidized iron

Minor Components

Dissimilar components:
- Catpoint soils, which are somewhat excessively drained and sandy throughout; in the higher convex landscape positions on stream terraces
- Myatt soils, which are poorly drained; in the lower linear and concave landscape positions on stream terraces and uplands
- Pactolus soils, which are sandy throughout; on stream terraces in landscape positions similar to those of the Nansemond soil
- Osier soils, which are poorly drained and sandy throughout; in the lower linear or concave landscape positions on stream terraces

Similar components:
- Eunola soils, which have more clay in the subsoil; on stream terraces in landscape positions similar to those of the Nansemond soil
- Rumford soils, which are well drained; in the higher convex landscape positions on uplands

Soil Properties and Qualities

Available water capacity: Low (about 5.7 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Loamy marine or fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The excessive permeability increases the risk of ground-water contamination.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to yellow-poplar and sweetgum
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Prime farmland if irrigated
Land capability class: 2w
Virginia soil management group: F
Hydric soil: No

20A—Osier loamy fine sand, 0 to 2 percent slopes, rarely flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Broad flats on treads
Size of areas: 5 to 50 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Osier and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 7 inches—dark grayish brown loamy fine sand

Substratum:
7 to 16 inches—light brownish gray loamy fine sand; yellowish brown masses of oxidized iron
16 to 30 inches—light gray loamy fine sand; yellowish brown masses of oxidized iron
30 to 60 inches—light gray sand; light yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Nansemond soils, which are moderately well drained and loamy throughout; in the higher linear or concave landscape positions
- Myatt soils, which are loamy; in landscape positions similar to those of the Osier soil

Similar components:
- Pactolus soils, which are moderately well drained; in the higher linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 3.7 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 6 inches
Water table (kind): Apparent
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- Because of the limited available water capacity, plants may suffer from moisture stress.
- The excessive permeability increases the risk of ground-water contamination.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Well suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine
- Soil wetness may limit the use of log trucks.
- This soil is well suited to haul roads and log landings.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: E
Hydric soil: Yes

21A—Pactolus loamy sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terraces and stream terraces
Position on the landform: Uplands and linear or concave treads
Size of areas: 5 to 20 acres
Shape of areas: Irregular

Map Unit Composition

Pactolus and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 11 inches—brown loamy sand

Substratum:
11 to 24 inches—light yellowish brown loamy sand
24 to 33 inches—light olive brown loamy sand; light gray iron depletions
33 to 60 inches—light gray sand

Minor Components

Dissimilar components:
- Nansemond soils, which are loamy throughout; in landscape positions similar to those of the Pactolus soil
- Myatt soils, which are poorly drained; in the lower linear and concave landscape positions

Similar components:
- Catpoint soils, which are somewhat excessively drained; in the higher convex landscape positions
- Osier soils, which are poorly drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 3.3 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Sandy marine or fluvial sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and wheat; poorly suited to soybeans; not suited to grass-legume hay
- Because of the limited available water capacity, plants may suffer from moisture stress.
- The excessive permeability increases the risk of ground-water contamination.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.

Pasture

Suitability: Poorly suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Well suited to loblolly pine
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3s
Virginia soil management group: EE
Hydric soil: No

22D—Remlik and Nevarc soils, 6 to 15 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands

Size of areas: 2 to 20 acres
Shape of areas: Irregular and long and winding

Map Unit Composition

Remlik and similar soils: Typically 40 percent, ranging from about 35 to 45 percent
Nevarc and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Remlik

Surface layer:
0 to 4 inches—brown loamy sand

Subsurface layer:
4 to 22 inches—light yellowish brown loamy sand

Subsoil:
22 to 38 inches—strong brown sandy clay loam
38 to 70 inches—strong brown sandy loam

Nevarc

Surface layer:
0 to 6 inches—grayish brown sandy loam

Subsoil:
6 to 22 inches—pale brown clay loam; yellowish brown masses of oxidized iron
22 to 40 inches—yellowish brown clay; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
40 to 60 inches—pinkish gray clay; strong brown and red masses of oxidized iron

Minor Components

Dissimilar components:
- Bibb and Kinston soils, which are poorly drained and subject to flooding; on narrow bottoms along drainageways and small streams

Similar components:
- Emporia soils, which are well drained and have gray iron depletions in the subsoil deeper than those of the Nevarc soil; in similar landscape positions
- Kemspville and Suffolk soils, which are well drained and do not have gray iron depletions in the subsoil; in landscape positions similar to those of the Remlik and Nevarc soils
- Rumford soils, which are well drained, have less clay in the subsoil than the Nevarc soil, and do not have a thick sandy surface layer like that of the Remlik soil; in similar landscape positions
- Slagle soils, which are moderately well drained and have less clay in the subsoil than the Nevarc soil; in similar landscape positions
- Soils that have sandy surface material more than 40 inches thick; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that have more gravel than the Remlik and Nevarc soils; in similar landscape positions
- Soils that are severely eroded; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that contain ironstone fragments; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that are in areas of springs or seeps; at the base of slopes

Soil Properties and Qualities

Available water capacity: Remlik—moderate (about 6.2 inches); Nevarc—moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Remlik—moderately high (about 0.57 in/hr); Nevarc—moderately low (about 0.06 in/hr)
Drainage class: Remlik—well drained; Nevarc—moderately well drained
Depth to seasonal water saturation: Remlik—about 48 to 72 inches; Nevarc—about 18 to 36 inches
Water table (kind): Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Remlik—low; Nevarc—moderate
Runoff class: Medium
Parent material: Remlik—loamy marine sediments; Nevarc—clayey and loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat and grass-legume hay; poorly suited to corn and soybeans
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- The high clay content restricts the rooting depth of crops.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Moderately suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets

- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- Because of the low soil strength, these soils are unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: Remlik—DD; Nevarc—HH
Hydric soils: No

22F—Remlik and Nevarc soils, 15 to 60 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 2 to 20 acres
Shape of areas: Irregular and long and winding

Map Unit Composition

Remlik and similar soils: Typically 40 percent, ranging from about 35 to 45 percent
Nevarc and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Remlik

Surface layer:
0 to 4 inches—brown loamy sand

Subsurface layer:
4 to 22 inches—light yellowish brown loamy sand

Subsoil:
22 to 38 inches—strong brown sandy clay loam
38 to 70 inches—strong brown sandy loam

Nevarc

Surface layer:
0 to 6 inches—grayish brown sandy loam

Subsoil:
6 to 22 inches—pale brown clay loam; yellowish brown masses of oxidized iron
22 to 40 inches—yellowish brown clay; strong brown masses of oxidized iron and light gray iron depletions

Substratum:
40 to 60 inches—pinkish gray clay; strong brown and red masses of oxidized iron

Minor Components

Dissimilar components:
- Bibb and Kinston soils, which are poorly drained and subject to flooding; on narrow bottoms along drainageways and small streams

Similar components:
- Emporia soils, which are well drained and have gray iron depletions in the subsoil deeper than those of the Nevarc soil; in similar landscape positions
- Kemspville and Suffolk soils, which are well drained and do not have gray iron depletions in the subsoil; in landscape positions similar to those of the Remlik and Nevarc soils
- Rumford soils, which are well drained, have less clay in the subsoil than the Nevarc soil, and do not have a thick sandy surface layer like that of the Remlik soil; in similar landscape positions
- Slagle soils, which are moderately well drained and have less clay in the subsoil than the Nevarc soil; in similar landscape positions
- Soils that have sandy surface material more than 40 inches thick; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that have more gravel than the Remlik and Nevarc soils; in similar landscape positions
- Soils that are severely eroded; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that contain ironstone fragments; in landscape positions similar to those of the Remlik and Nevarc soils
- Soils that are in areas of springs or seeps; at the base of slopes

Soil Properties and Qualities

Available water capacity: Remlik—moderate (about 6.2 inches); Nevarc—moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Remlik—moderately high (about 0.57 in/hr); Nevarc—moderately low (about 0.06 in/hr)
Drainage class: Remlik—well drained; Nevarc—moderately well drained
Depth to seasonal water saturation: Remlik—about 48 to 72 inches; Nevarc—about 18 to 36 inches
Water table (kind): Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Remlik—low; Nevarc—moderate
Runoff class: Medium
Parent material: Remlik—loamy marine sediments; Nevarc—clayey and loamy marine sediments

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pasture

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting and mechanical planting equipment.
- Because of the slope, the use of equipment for mechanical planting and the preparation of sites for planting and seeding are impractical.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets

- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- Because of the low soil strength, these soils are unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Remlik—DD; Nevarc—HH
Hydric soils: No

23A—Riverview loamy fine sand, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Flood plain on coastal plain
Position on the landform: Linear or convex positions
Size of areas: 2 to 110 acres
Shape of areas: Elongated, irregularly oval, or irregularly rectangular

Map Unit Composition

Riverview and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 12 inches—brown loamy fine sand

Subsoil:
12 to 21 inches—dark yellowish brown fine sandy loam
21 to 30 inches—yellowish brown loam
30 to 39 inches—yellowish brown loam; light gray iron depletions
39 to 50 inches—strong brown loam; light gray iron depletions

Substratum:
50 to 65 inches—strong brown loam; gray iron depletions

Minor Components

Dissimilar components:
- Mattan soils, which are very poorly drained and have an organic subsurface layer; in the lower linear or concave landscape positions near the lower reaches of the Mattaponi and Pamunkey Rivers
- Wehadkee soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Soils that have less clay than the Riverview soil; in similar landscape positions
- Soils that have less than 50 percent gray iron depletions in the upper part of the subsoil; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 36 to 60 inches
Water table (kind): Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay in areas that are not frequently flooded during the growing season
- Because of the frequent flooding, the use of winter grain crops is restricted.
- Flooding may damage crops.

Pasture

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Well suited to loblolly pine, yellow-poplar, and sweetgum

- Flooding may result in damage to haul roads.
- Flooding restricts the safe use of roads by log trucks.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2w
Virginia soil management group: G
Hydric soil: No

24A—Roanoke silt loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear or concave treads
Size of areas: 2 to 50 acres
Shape of areas: Irregular

Map Unit Composition

Roanoke and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark brown silt loam

Subsurface layer:
2 to 12 inches—light brownish gray silt loam; pale brown iron depletions

Subsoil:
12 to 23 inches—gray clay loam; very pale brown and yellowish brown masses of oxidized iron
23 to 46 inches—gray clay; yellow and yellowish brown masses of oxidized iron

Substratum:
46 to 54 inches—gray loamy sand; yellow and yellowish brown masses of oxidized iron
54 to 65 inches—gray sandy clay loam; yellowish brown and yellow masses of oxidized iron and light brownish gray iron depletions

Minor Components

Dissimilar components:
- Altavista and Seabrook soils, which are moderately well drained and have less clay

in the subsoil than the Roanoke soil; in the higher linear or concave landscape positions

Similar components:
- Tomotley soils, which have less clay in the subsoil than the Roanoke soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 9.1 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Parent material: Clayey fluvial sediments

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat; not suited to grass-legume hay
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Poorly suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Moderately suited to sweetgum
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

- Shrinking and swelling restrict the use of the soil as base material for local roads and streets.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: NN
Hydric soil: Yes

25A—Seabrook loamy fine sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear or concave treads
Size of areas: 3 to 20 acres
Shape of areas: Elongated or irregularly oblong

Map Unit Composition

Seabrook and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loamy fine sand

Substratum:
4 to 22 inches—brownish yellow loamy fine sand
22 to 30 inches—light yellowish brown loamy fine sand
30 to 41 inches—light yellowish brown loamy fine sand; light gray iron depletions and yellowish brown masses of oxidized iron
41 to 47 inches—pale yellow sand; light gray iron depletions and yellowish brown masses of oxidized iron
47 to 72 inches—light brownish gray sand; yellowish brown and yellowish red masses of oxidized iron

Minor Components

Dissimilar components:
- Bojac soils, which are well drained and loamy; in the higher convex landscape positions
- Conetoe soils, which are well drained and have thick sandy surface layers over loamy sediments; in the higher convex landscape positions
- Munden soils, which are loamy; in landscape positions similar to those of the Seabrook soil

Similar components:
- Tarboro soils, which are somewhat excessively drained; in the higher convex landscape positions
- Soils that are poorly drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 3.3 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)

Drainage class: Moderately well drained
Depth to seasonal water saturation: About 24 to 48 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and wheat; poorly suited to soybeans; not suited to grass-legume hay
- Because of the limited available water capacity, plants may suffer from moisture stress.
- The excessive permeability increases the risk of ground-water contamination.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.

Pasture

Suitability: Poorly suited
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Moderately suited to loblolly pine
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: Prime farmland if irrigated
Land capability class: 3s
Virginia soil management group: EE
Hydric soil: No

26A—Slagle loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 5 to 20 acres
Shape of areas: Elongated, irregularly oval, or irregularly rectangular

Map Unit Composition

Slagle and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark grayish brown loam

Subsurface layer:
2 to 14 inches—very pale brown loam

Subsoil:
14 to 24 inches—brownish yellow clay loam
24 to 34 inches—yellowish brown clay loam; strong brown masses of oxidized iron and pale brown iron depletions
34 to 48 inches—light yellowish brown, yellowish brown, and brownish yellow clay loam; light gray iron depletions
48 to 62 inches—light gray sandy clay loam; pale brown iron depletions and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Myatt soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Emporia, Kempsville, and Suffolk soils, which are well drained; in landscape positions similar to those of the Slagle soil
- Eulonia soils, which have more clay in the subsoil than the Slagle soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- This soil is well suited to cropland.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to southern red oak, yellow-poplar, and sweetgum
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2w
Virginia soil management group: K
Hydric soil: No

26B—Slagle loam, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 5 to 50 acres
Shape of areas: Elongated, irregularly oval, or irregularly rectangular

Map Unit Composition

Slagle and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 2 inches—very dark grayish brown loam

Subsurface layer:
2 to 14 inches—very pale brown loam

Subsoil:
14 to 24 inches—brownish yellow clay loam
24 to 34 inches—yellowish brown clay loam; strong brown masses of oxidized iron and pale brown iron depletions
34 to 48 inches—light yellowish brown, yellowish brown, and brownish yellow clay loam; light gray iron depletions
48 to 62 inches—light gray sandy clay loam; pale brown iron depletions and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Myatt soils, which are poorly drained; in the lower linear or concave landscape positions

Similar components:
- Emporia, Kempsville, and Suffolk soils, which are well drained; in landscape positions similar to those of the Slagle soil
- Eulonia soils, which have more clay in the subsoil than the Slagle soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine; moderately suited to southern red oak, yellow-poplar, and sweetgum
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: K
Hydric soil: No

27A—State loamy fine sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 25 acres
Shape of areas: Irregular

Map Unit Composition

State and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—yellowish brown loamy fine sand

Subsoil:
10 to 13 inches—yellowish brown fine sandy loam
13 to 33 inches—strong brown sandy clay loam
33 to 50 inches—strong brown fine sandy loam; reddish yellow and pale yellow masses of oxidized iron

Substratum:
50 to 65 inches—strong brown loamy fine sand

Minor Components

Similar components:
- Altavista soils, which are moderately well drained; in the lower or concave landscape positions
- Bojac soils, which have less clay in the subsoil than the State soil; in similar landscape positions
- Munden soils, which are moderately well drained and have less clay in the subsoil than the State soil; in the lower linear or concave landscape positions
- Wickham soils, which have redder colors than the State soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine, southern red oak, and yellow-poplar
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: B
Hydric soil: No

27B—State loamy fine sand, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 25 acres
Shape of areas: Irregular

Map Unit Composition

State and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—yellowish brown loamy fine sand

Subsoil:
10 to 13 inches—yellowish brown fine sandy loam
13 to 33 inches—strong brown sandy clay loam
33 to 50 inches—strong brown fine sandy loam; reddish yellow and pale yellow masses of oxidized iron

Substratum:
50 to 65 inches—strong brown loamy fine sand

Minor Components

Similar components:
- Altavista soils, which are moderately well drained; in the lower or concave landscape positions
- Bojac soils, which have less clay in the subsoil than the State soil; in similar landscape positions
- Munden soils, which are moderately well drained and have less clay in the subsoil than the State soil; in the lower linear or concave landscape positions
- Wickham soils, which have redder colors than the State soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: About 48 to 79 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine, southern red oak, and yellow-poplar
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: B
Hydric soil: No

28A—Suffolk and Rumford soils, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 4 to 30 acres
Shape of areas: Smooth and elongated or irregularly oval

Map Unit Composition

Suffolk and similar soils: Typically 40 percent, ranging from about 35 to 45 percent
Rumford and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Suffolk

Surface layer:
0 to 10 inches—brown loamy sand

Subsoil:
10 to 14 inches—yellowish brown sandy loam
14 to 38 inches—strong brown sandy loam
38 to 43 inches—strong brown loamy sand

Substratum:
43 to 65 inches—yellow sand; reddish yellow masses of oxidized iron

Rumford

Surface layer:
0 to 7 inches—dark brown sandy loam

Subsoil:
7 to 15 inches—brown sandy loam
15 to 30 inches—strong brown sandy loam
30 to 37 inches—strong brown loamy sand

Substratum:
37 to 43 inches—brownish yellow sand
43 to 65 inches—yellow and very pale brown sand

Minor Components

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Suffolk and Rumford soils
- Kempsville soils, which have iron masses in the lower part of the subsoil; in landscape positions similar to those of the Suffolk and Rumford soils
- Nansemond and Slagle soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Suffolk—low (about 5.6 inches); Rumford—low (about 6.0 inches)
Slowest saturated hydraulic conductivity: Suffolk—moderately high (about 0.57 in/hr); Rumford—high (about 1.98 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Suffolk—low; Rumford—very low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- These soils are well suited to pasture.

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- These soils are well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: Suffolk—T; Rumford—DD
Hydric soils: No

28B—Suffolk and Rumford soils, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terrace on coastal plain
Position on the landform: Uplands
Size of areas: 4 to 30 acres
Shape of areas: Smooth and elongated or irregularly oval

Map Unit Composition

Suffolk and similar soils: Typically 40 percent, ranging from about 35 to 45 percent
Rumford and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Suffolk

Surface layer:
0 to 10 inches—brown loamy sand

Subsoil:
10 to 14 inches—yellowish brown sandy loam
14 to 38 inches—strong brown sandy loam
38 to 43 inches—strong brown loamy sand

Substratum:
43 to 65 inches—yellow sand; reddish yellow masses of oxidized iron

Rumford

Surface layer:
0 to 7 inches—dark brown sandy loam

Subsoil:
7 to 15 inches—brown sandy loam
15 to 30 inches—strong brown sandy loam
30 to 37 inches—strong brown loamy sand

Substratum:
37 to 43 inches—brownish yellow sand
43 to 65 inches—yellow and very pale brown sand

Minor Components

Similar components:
- Emporia soils, which have gray iron depletions in the lower part of the subsoil; in landscape positions similar to those of the Suffolk and Rumford soils

- Kempsville soils, which have iron masses in the lower part of the subsoil; in landscape positions similar to those of the Suffolk and Rumford soils
- Nansemond and Slagle soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Suffolk—low (about 5.6 inches); Rumford—low (about 6.0 inches)
Slowest saturated hydraulic conductivity: Suffolk—moderately high (about 0.57 in/hr); Rumford—high (about 1.98 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Suffolk—low; Rumford—very low
Parent material: Loamy marine sediments

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, wheat, and grass-legume hay; moderately suited to corn
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- These soils are well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: Suffolk—T; Rumford—DD
Hydric soils: No

29B—Tarboro sand, 0 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 10 acres
Shape of areas: Elongated and parallel to streams and drainageways

Map Unit Composition

Tarboro and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 9 inches—dark brown sand

Substratum:
9 to 16 inches—brownish yellow sand
16 to 43 inches—yellow and brownish yellow sand
43 to 80 inches—very pale brown and brownish yellow sand

Minor Components

Dissimilar components:
- Bojac soils, which are well drained and loamy; in landscape positions similar to those of the Tarboro soil
- Conetoe soils, which are well drained and have thick sandy surface horizons; in landscape positions similar to those of the Tarboro soil
- Munden soils, which are moderately well drained and loamy; in the lower linear or concave landscape positions

Similar components:
- Seabrook soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat; poorly suited to corn and soybeans; not suited to grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Because of the limited available water capacity, plants may suffer from moisture stress.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.

- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Poorly suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Poorly suited to loblolly pine
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: Prime farmland if irrigated
Land capability class: 3s
Virginia soil management group: II
Hydric soil: No

29D—Tarboro sand, 6 to 15 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 10 acres
Shape of areas: Elongated and parallel to streams and drainageways

Map Unit Composition

Tarboro and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 9 inches—dark brown sand

Substratum:
9 to 16 inches—brownish yellow sand

16 to 43 inches—yellow and brownish yellow sand
43 to 80 inches—very pale brown and brownish yellow sand

Minor Components

Dissimilar components:
- Bojac soils, which are well drained and loamy; in landscape positions similar to those of the Tarboro soil
- Conetoe soils, which are well drained and have thick sandy surface horizons; in landscape positions similar to those of the Tarboro soil
- Munden soils, which are moderately well drained and loamy; in the lower linear or concave landscape positions

Similar components:
- Seabrook soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat; poorly suited to corn and soybeans; not suited to grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Because of the limited available water capacity, plants may suffer from moisture stress.
- Because of sandy or coarse textured layers, the rate at which plant nutrients are leached is increased.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Poorly suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Poorly suited to loblolly pine
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.

- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4s
Virginia soil management group: II
Hydric soil: No

29F—Tarboro sand, 15 to 50 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 2 to 10 acres
Shape of areas: Elongated and parallel to streams and drainageways

Map Unit Composition

Tarboro and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 9 inches—dark brown sand

Substratum:
9 to 16 inches—brownish yellow sand
16 to 43 inches—yellow and brownish yellow sand
43 to 80 inches—very pale brown and brownish yellow sand

Minor Components

Dissimilar components:
- Bojac soils, which are well drained and loamy; in landscape positions similar to those of the Tarboro soil
- Conetoe soils, which are well drained and have thick sandy surface horizons; in landscape positions similar to those of the Tarboro soil
- Munden soils, which are moderately well drained and loamy; in the lower linear or concave landscape positions

Similar components:
- Seabrook soils, which are moderately well drained; in the lower linear or concave landscape positions

Soil Properties and Qualities

Available water capacity: Very low (about 2.7 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Parent material: Sandy fluvial sediments

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pasture

Suitability: Poorly suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.

Woodland

Suitability: Poorly suited to loblolly pine
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting and mechanical planting equipment.
- The slope restricts the use of equipment for preparing sites for planting and seeding.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The slope limits the proper treatment of effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: II
Hydric soil: No

30A—Tomotley fine sandy loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Linear or concave treads
Size of areas: 3 to 10 acres
Shape of areas: Irregularly rectangular or irregularly oval

Map Unit Composition

Tomotley and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—dark grayish brown fine sandy loam

Subsurface layer:
10 to 17 inches—gray fine sandy loam; yellowish brown masses of oxidized iron

Subsoil:
17 to 52 inches—gray loam; yellowish brown masses of oxidized iron

Substratum:
52 to 65 inches—gray sandy loam; yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Altavista soils, which are moderately well drained; in the higher linear or concave landscape positions
- Munden soils, which are moderately well drained and have less clay in the subsoil than the Tomotely soil; in the higher linear or concave landscape positions
- Seabrook soils, which are moderately well drained and sandy; in the higher linear or concave landscape positions

Similar components:
- Roanoke soils, which have more clay in the subsoil than the Tomotley soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat; not suited to grass-legume hay
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pasture

Suitability: Poorly suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine
- Soil wetness may limit the use of log trucks.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the low soil strength, this soil is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 4w
Virginia soil management group: OO
Hydric soil: Yes

31B—Udorthents, gently sloping

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Marine terraces and stream terraces
Position on the landform: Uplands and treads
Size of areas: 2 to 100 acres
Shape of areas: Variable

Map Unit Composition

Udorthents: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Udorthents consist of variable mixtures of disturbed soil material and gravel. A typical profile is not given.

Use and Management Considerations

- Onsite investigation is needed to determine the suitability of any area for specific uses.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: None assigned

Virginia soil management group: None assigned
Hydric soils: Not rated

32A—Wehadkee loam, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Flood plain on coastal plain
Position on the landform: Linear or concave areas
Size of areas: 3 to 10 acres
Shape of areas: Irregularly rectangular or irregularly oval

Map Unit Composition

Wehadkee and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—brown and grayish brown loam

Subsoil:
10 to 32 inches—light brownish gray loam; yellowish brown masses of oxidized iron
32 to 44 inches—gray clay loam; reddish yellow masses of oxidized iron

Substratum:
44 to 70 inches—light gray clay loam; reddish yellow masses of oxidized iron

Minor Components

Dissimilar components:
- Riverview soils, which are well drained; in the higher convex landscape positions
- Mattan soils, which are very poorly drained and have an organic subsurface layer; in the lower linear or concave landscape positions

Similar components:
- Soils that have less clay than the Wehadkee soil; in similar landscape positions
- Soils that have less than 50 percent gray iron depletions in the upper part of the subsoil; in the higher linear or concave areas

Soil Properties and Qualities

Available water capacity: High (about 10.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table (kind): Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Parent material: Loamy alluvial sediments

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pasture

Suitability: Well suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Well suited to loblolly pine and yellow-poplar; moderately suited to sweetgum
- Flooding may result in damage to haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6w
Virginia soil management group: MM
Hydric soil: Yes

33A—Wickham loamy fine sand, 0 to 2 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 20 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Wickham and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown loamy fine sand

Subsurface layer:
2 to 15 inches—light yellowish brown loamy fine sand

Subsoil:
15 to 37 inches—strong brown fine sandy loam

Substratum:
37 to 60 inches—strong brown and yellowish red loamy fine sand
60 to 70 inches—yellowish brown fine sand

Minor Components

Similar components:
- Altavista soils, which are moderately well drained; in the lower linear or concave landscape positions
- Bojac soils, which have less clay in the subsoil than the Wickham soil; in similar landscape positions
- Munden soils, which are moderately well drained and have less clay in the subsoil than the Wickham soil; in the lower linear or concave landscape positions
- State soils, which have strong brown colors in the subsoil; in landscape positions similar to those of the Wickham soil

Soil Properties and Qualities

Available water capacity: Moderate (about 6.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

- This soil is well suited to pasture.

Woodland

Suitability: Well suited to loblolly pine and southern red oak; moderately suited to yellow-poplar
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: B
Hydric soil: No

33B—Wickham loamy fine sand, 2 to 6 percent slopes

Setting

Major land resource area: Southern Coastal Plain (MLRA 133A)
Landform: Stream terrace on coastal plain
Position on the landform: Convex treads
Size of areas: 3 to 20 acres
Shape of areas: Elongated or irregularly oval

Map Unit Composition

Wickham and similar soils: Typically 80 percent, ranging from about 70 to 90 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown loamy fine sand

Subsurface layer:
2 to 15 inches—light yellowish brown loamy fine sand

Subsoil:
15 to 37 inches—strong brown fine sandy loam

Substratum:
37 to 60 inches—strong brown and yellowish red loamy fine sand
60 to 70 inches—yellowish brown fine sand

Minor Components

Similar components:
- Altavista soils, which are moderately well drained; in the lower linear or concave landscape positions
- Bojac soils, which have less clay in the subsoil than the Wickham soil; in similar landscape positions
- Munden soils, which are moderately well drained and have less clay in the subsoil than the Wickham soil; in the lower linear or concave landscape positions
- State soils, which have strong brown colors in the subsoil; in landscape positions similar to those of the Wickham soil

Soil Properties and Qualities

Available water capacity: Moderate (about 6.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Parent material: Loamy fluvial sediments

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, wheat, and grass-legume hay
- The slope increases the erosion hazard, surface runoff, and nutrient loss.
- Soil crusting decreases water infiltration and interferes with the emergence of seedlings.

Pasture

Suitability: Well suited
- The slope increases the erosion hazard, surface runoff, and nutrient loss.

Woodland

Suitability: Well suited to loblolly pine and southern red oak; moderately suited to yellow-poplar
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- Because of the high content of sand or gravel in the soil, sloughing is increased and cutbanks are more susceptible to caving.

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems, which may pollute the water table.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: B
Hydric soil: No

W—Water

This map unit is in the Southern Coastal Plain major land resource area (MLRA 133A). It includes ponds, lakes, creeks, rivers, and reservoirs.

This map unit is not assigned any interpretive groups.

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for agricultural waste management. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Effective pasture management practices include maintaining a mixture of grasses and legumes, rotating pastures, deferring grazing, controlling undesirable vegetation, and using proper stocking rates.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based VALUES—the Virginia Agronomic Land Use Evaluation System *(19)*. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Realistic yield goals can be maintained over a long-term basis through proper nutrient management and other soil amendments such as lime. Applications of nitrogen and phosphorus from organic and inorganic forms should be done according to approved nutrient management practices and regulations.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the yields table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit *(16)*. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section "Detailed Soil Map Units" and in table 5.

Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system that ranks soils for management and productivity *(19)*. VALUES places each soil series in Virginia into one of 43 management groups. The format of the management groups, A through QQ, include the following soil characteristics—regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features,

such as texture; available water capacity for plants; and internal soil drainage. Yields that are both economically and environmentally feasible were assigned to each management group, based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in King William County.

Group B. The soils in this group formed from alluvium within the Coastal Plain region and are associated with stream and river terraces. They are deep, have loamy textures throughout, have a high available water capacity, and are well drained or moderately well drained.

Group E. The soils in this group formed from sandy coastal plain sediments on low-lying terraces, depressions, or flats where surface drainage is restricted. They are deep, have coarse-loamy textures throughout, commonly have a high water table even during some parts of the growing season, have a high available water capacity, and are poorly drained.

Group F. The soils in this group formed in coarse textured coastal plain sediments, in low-lying landscape positions and are underlain by stratified loamy sediments. They are deep, have coarse-loamy textures throughout, have a high or moderately high available water capacity, and are somewhat poorly drained.

Group G. The soils in this group formed in locally transported, medium textured sediments of alluvial origin. They are in landscape positions ranging from footslopes and toeslopes to the heads of drainageways, to depressions, and to narrow upland drainageways. They are deep and have a silty to loamy upper subsoil that is underlain with clayey to stony materials. They have a moderately high available water capacity and range from moderately well drained to somewhat poorly drained.

Group K. The soils in this group formed from mixed marine and fluvial sediments on Coastal Plain landscapes that range from stream terraces to broad, nearly level interfluves in uplands. They are deep, have a loamy surface layer and a clay loam to clayey subsurface layer, have a moderate available water capacity, and are somewhat poorly drained.

Group R. The soils in this group formed from marine sediments on the gently sloping uplands of the Coastal Plain. They are deep, have a sandy loam surface layer, have a reddish yellow clayey to clay loam subsurface layer with some mottles in the lower part, have a moderate available water capacity, and are well drained or moderately well drained.

Group S. The soils in this group formed from loamy sediments on gently sloping uplands of the Coastal Plain. They are moderately deep, have fine-loamy textures in the subsoil, have a moderate to high available water capacity, and are well drained or moderately well drained.

Group T. The soils in this group formed from loamy sediments on uplands and streams terraces of the Coastal Plain. They are deep, have fine-loamy subsurface textures that commonly are underlain by coarser sediments, have a moderate available water capacity, and are well drained.

Group DD. The soils in this group formed from loamy sediments and local alluvium. They formed on gently sloping uplands and stream terraces of the Coastal Plain. They are moderately deep, have predominantly coarse-loamy subsurface horizons, and in some areas have Arenic or very thick sandy surface layers. They have a moderately low available water capacity and are excessively drained.

Group EE. The soils in this group formed in loamy sediments on low-lying landscape positions of the Coastal Plain. They are deep and have coarse-loamy to sandy subsurface horizons. These soils typically have a high water table during some part of the year, but the soil textures are very sandy. These soils are poorly drained or very poorly drained.

Group HH. The soils in this group formed from loamy and finer sediments in flood-plain positions of the Coastal Plain. They are moderately deep, have fine-loamy or

clayey subsurface textures, have a moderate available water capacity, and range from somewhat poorly drained to moderately well drained.

Group II. The soils in this group formed from sandy parent materials within the Coastal Plain or from local alluvium or colluvium of sandy origin. They are sandy textured throughout, have little horizonation, have a low or very low available water capacity, and are well drained or moderately well drained.

Group MM. The soils in this group formed from loamy sediments on flood plains of the Coastal Plain. They are frequently flooded, have a moderate to high available water capacity, and are poorly drained.

Group NN. The soils in this group formed in alluvium along streams or on terraces. They are moderately deep, have silty to clay loam subsurface layers, have a moderately high available water capacity, and are somewhat poorly drained or poorly drained.

Group OO. The soils in this group formed from alluvium or coastal plain sediments on terraces, levees, and broad, nearly level landscapes of the Coastal Plain. They have loamy to silty textures throughout, have a high available water capacity, and are poorly drained.

Group PP. The soils in this group formed in marshes and tidal wetlands of the Coastal Plain. They occur in tidal basins, tidal flats, and other ponded areas. In some areas they have organic horizons, clayey mineral horizons, or sulfidic materials. The soils have a water table at or near the soil surface and are saturated most of the time.

The management groups for the map units in the survey area are given in the section “Detailed Soil Map Units” and in table 5.

Prime Farmland

Table 6 lists the map units in the survey area that are considered prime farmland. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

For some of the soils identified in table 6 as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. In King William County, about 12,000 acres of the total acreage of prime farmland require drainage and about 5,150 acres require irrigation. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The location of each prime farmland map unit is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Hydric Soils

Table 7 lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(6, 8)*.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology *(3, 8, 9, 10)*. Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part *(4)*. These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established *(5)*. These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” *(14)* and “Keys to Soil Taxonomy” *(13)* and in the “Soil Survey Manual” *(17)*.

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” *(6)*.

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units

dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

1A	Altavista loamy sand, 0 to 2 percent slopes, rarely flooded
1B	Altavista fine sandy loam, 2 to 6 percent slopes
5A	Bojac gravelly loamy sand, 0 to 2 percent slopes, rarely flooded
6A	Bojac fine sandy loam, 0 to 2 percent slopes
6B	Bojac fine sandy loam, 2 to 6 percent slopes
7A	Catpoint sand, 0 to 4 percent slopes
11A	Eulonia fine sandy loam, 0 to 2 percent slopes
11B	Eulonia fine sandy loam, 2 to 6 percent slopes
12A	Eunola sandy loam, 0 to 2 percent slopes
12B	Eunola sandy loam, 2 to 6 percent slopes
17A	Munden loamy sand, 0 to 2 percent slopes
19A	Nansemond loamy fine sand, 0 to 2 percent slopes
21A	Pactolus loamy sand, 0 to 2 percent slopes
22D	Remlik and Nevarc soils, 6 to 15 percent slopes
22F	Remlik and Nevarc soils, 15 to 60 percent slopes
23A	Riverview loamy fine sand, 0 to 2 percent slopes, frequently flooded
26A	Slagle loam, 0 to 2 percent slopes
26B	Slagle loam, 2 to 6 percent slopes
27A	State loamy fine sand, 0 to 2 percent slopes

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 8, parts I, II, and III, show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only

for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect agricultural waste management. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant

growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The

applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 9, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual” *(11)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In table 10, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management

aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, schedule of activities, and Best Management Practices (BMPs) for each activity. Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual" *(11)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some

erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreational Development

In table 11, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special

design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways,

pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 12, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding,

subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 13, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Table 14, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 14, part I, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A

rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 14, part II, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 15 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils

are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Soil Properties

Table 16 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional

refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

Physical Soil Properties

Table 17 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water

storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in the table as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least

susceptible. The groups are described in the “National Soil Survey Handbook” *(12)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Soil Properties

Table 18 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Water Features

Table 19 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the

surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top *(upper limit)* and base *(lower limit)* of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 20 gives estimates of the risk of corrosion as a soil feature. The estimates are used in land use planning that involves engineering considerations.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(13, 14)*. Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 21 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Ultisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols that has a udic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, siliceous, thermic Typic Hapludults.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in

the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” *(17)* and in the “Field Book for Describing and Sampling Soils” *(15)*. Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” *(14)* and in “Keys to Soil Taxonomy” *(13)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Altavista Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy and sandy alluvial sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Bojac soils, which are well drained and have less clay in the subsoil than the Altavista soils
- Munden soils, which have less clay in the subsoil than the Altavista soils
- Riverview soils, which are well drained and subject to frequent flooding
- Roanoke and Tomotley soils, which are poorly drained
- State and Wickham soils, which are well drained
- Wehadkee soils, which are poorly drained and subject to frequent flooding

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Altavista loamy sand, 0 to 2 percent slopes, rarely flooded; in a cultivated field, 0.95 mile east of the junction of Highways VA-640 and VA-643, about 100 yards north of Highway VA-643; elevation of 25 feet:

A—0 to 12 inches; brown (10YR 4/3) loamy sand; weak fine granular structure; very friable, nonsticky, nonplastic; many fine roots; many fine and medium tubular pores; very strongly acid; clear smooth boundary.

E—12 to 16 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable, nonsticky, nonplastic; many fine roots; common fine and medium tubular pores; few fine mica flakes; very strongly acid; clear smooth boundary.

BE—16 to 20 inches; yellowish brown (10YR 5/4) sandy loam; weak fine subangular blocky and granular structure; very friable, slightly sticky, slightly plastic; common fine roots; common fine and medium tubular pores; few fine mica flakes; very strongly acid; gradual smooth boundary.

Bt—20 to 34 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine roots; common fine and medium tubular pores; common faint clay films on all faces of peds; few fine mica flakes; very strongly acid; gradual smooth boundary.

BC—34 to 40 inches; brownish yellow (10YR 6/6) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; common fine tubular pores; few faint clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron and common medium prominent light gray (10YR 7/2) iron depletions; few fine mica flakes; very strongly acid; clear smooth boundary.

C—40 to 65 inches; brownish yellow (10YR 6/6) sand; massive; very friable, slightly sticky, slightly plastic; few fine and medium tubular pores; many medium prominent light gray (10YR 7/2) iron depletions; few fine mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Rock fragments: 0 to 5 percent gravel in the A, E, BE, and Bt horizons; 0 to 15 percent gravel in the C horizon in some pedons
Soil reaction: Extremely acid to moderately acid, except in limed areas
Mica flakes: Few or common the Bt and C horizons of most pedons

A horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—loamy sand, sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—loamy sand, sandy loam, fine sandy loam, or loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—loamy sand, sandy loam, fine sandy loam, or loam

BE horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Bt horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray (iron depletions occur within the upper 24 inches of the Bt horizon)

Btg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BC horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

C horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—sand, fine sand, loamy sand, sandy loam, or fine sandy loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Cg horizon (if it occurs):
Hue—neutral or 7.5YR to 2.5Y
Value—4 to 7
Chroma—0 to 2
Texture—sand, fine sand, loamy sand, sandy loam, or fine sandy loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Bama Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Daleville soils, which are poorly drained

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Paleudults

Typical Pedon

Bama loam, 2 to 6 percent slopes; in an area of mixed pines and hardwoods, 0.38 mile west of the junction of Highways VA-632 and VA-651, about 130 yards north of Highway VA-632, along a woodland road to Chesapeake research plots; elevation of 115 feet:

A—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; very friable; common fine and medium roots; common fine tubular pores; very strongly acid; clear wavy boundary.
E—4 to 13 inches; light yellowish brown (10YR 6/4) loam; weak medium subangular blocky structure; friable; common fine and medium roots; many medium tubular pores; very strongly acid; clear smooth boundary.
BE—13 to 19 inches; strong brown (7.5YR 5/6) loam; weak medium subangular blocky structure; friable; common fine and medium roots; many medium tubular pores; many medium prominent pale brown (10YR 6/3) iron depletions; very strongly acid; clear wavy boundary.
Bt1—19 to 26 inches; yellowish red (5YR 5/6) loam; moderate medium subangular blocky structure; friable; common fine and few medium roots; many medium tubular pores; few faint clay films on all faces of peds; many medium prominent pale brown (10YR 6/3) iron depletions; 1 percent rounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt2—26 to 37 inches; yellowish red (5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots; few fine tubular pores; many faint clay films on all faces of peds; common medium distinct red (2.5YR 4/6) masses of oxidized iron; 1 percent rounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt3—37 to 50 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; few fine tubular pores; many faint clay films on all faces of peds; common medium distinct red (2.5YR 4/6) masses of oxidized iron; 1 percent rounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt4—50 to 70 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; many faint clay films on all faces of peds; few medium prominent pink (7.5YR 7/4) masses of oxidized iron; 1 percent rounded quartz gravel; very strongly acid.

Range in Characteristics

Solum thickness: 60 inches or more
Rock fragments: 0 to 15 percent gravel throughout the profile
Soil reaction: Very strongly acid or strongly acid, except in limed areas

A horizon:
Hue—5YR to 10YR
Value—3 to 5
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—5YR to 10YR
Value—3 to 5
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, or loam

E horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

BE horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Bt horizon:
Hue—10R to 5YR
Value—4 to 6
Chroma—6 or 8
Texture—loam, sandy clay loam, or clay loam

Bibb Series

Physiographic province: Southern Coastal Plain
Landform: Flood plains
Parent material: Stratified loamy and sandy alluvial sediments
Drainage class: Poorly drained

Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Kinston soils, which are poorly drained and have less clay in the substratum than the Bibb soils
- Lanexa and Mattan soils, which are very poorly drained and formed in organic materials
- Osier soils, which are poorly drained and have less clay in the substratum than the Bibb soils

Taxonomic Classification

Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents

Typical Pedon

Bibb loamy sand in an area of Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded; in an area of mixed hardwoods, about 100 yards north of Highway VA-626, along Cohoke Creek; elevation of 30 feet:

A—0 to 4 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.
Ag—4 to 15 inches; grayish brown (10YR 5/2) loamy sand; single grain; loose; many fine and medium roots; common medium distinct gray (10YR 6/1) iron depletions and common medium prominent yellowish red (5YR 5/6) masses of oxidized iron; strongly acid; clear smooth boundary.
Cg1—15 to 42 inches; gray (10YR 6/1) sandy loam; massive; friable, slightly sticky, slightly plastic; few fine roots; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; strongly acid; gradual smooth boundary.
Cg2—42 to 65 inches; gray (5Y 6/1) loamy sand; massive; very friable, slightly sticky, slightly plastic; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to strongly acid
Rock fragments: 0 to 3 percent gravel in the A horizon; 0 to 20 percent gravel in the Cg horizon

A horizon:
Hue—7.5YR or 10YR
Value—2 to 5
Chroma—1 to 3
Texture—sand, loamy sand, sandy loam, fine sandy loam, loam, or silt loam

Ag horizon:
Hue—neutral or 10YR or 2.5Y
Value—3 to 7
Chroma—0 to 2
Texture—sand, loamy sand, sandy loam, fine sandy loam, loam, or silt loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Cg horizon (upper part):
Hue—neutral or 10YR to 5BG
Value—3 to 7
Chroma—0 to 2

Texture (fine-earth fraction)—horizon is sandy loam, fine sandy loam, loam, or silt loam or is stratified
Redoximorphic features—iron masses in shades of brown, yellow, or red

Cg horizon (lower part):
Hue—neutral or 10YR to 5BG
Value—3 to 7
Chroma—0 to 2
Texture (fine-earth fraction)—sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam, or silt loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bohicket Series

Physiographic province: Southern Coastal Plain
Landform: Tidal marshes
Parent material: Loamy and clayey alluvial sediments
Drainage class: Very poorly drained
Slowest saturated hydraulic conductivity: Low
Slope: 0 to 1 percent

Associated Soils

- Lanexa and Mattan soils, which are poorly drained and support salt-tolerant vegetation

Taxonomic Classification

Fine, mixed, superactive, nonacid, thermic Typic Sulfaquents

Typical Pedon

Bohicket silty clay loam, 0 to 1 percent slopes, very frequently flooded; in an area of saltwater grasses, 0.38 mile north of the junction of Highway VA-30 and the Mattaponi River Bridge at West Point; elevation of 1 foot:

Ag—0 to 8 inches; gray (5Y 5/1) silty clay loam; massive; slightly sticky, slightly plastic; many fine and medium roots; material flows easily between fingers when squeezed; neutral; gradual wavy boundary.
Cg1—8 to 29 inches; dark greenish gray (5GY 4/1) silty clay loam; massive; moderately sticky, slightly plastic; few fine roots; material flows very easily between fingers when squeezed; strong sulfur odor; slightly alkaline; gradual wavy boundary.
Cg2—29 to 65 inches; dark greenish gray (5GY 4/1) silty clay; massive; moderately sticky, moderately plastic; material flows very easily between fingers when squeezed; moderate sulfur odor; moderately alkaline.

Range in Characteristics

Soil reaction: Slightly acid to moderately alkaline; extremely acid upon drying
Thickness of organic layer (if it occurs): 1 to 16 inches

Organic layers (if they occur):
Organic material—sapric or hemic

Ag horizon:
Hue—neutral or 10YR to 5G
Value—2 to 5
Chroma—0 to 2
Texture—silty clay loam, silty clay, or clay

Cg horizon (upper part):
Hue—neutral or 10YR to 5BG
Value—2 to 7
Chroma—0 to 2
Texture—clay loam, silty clay loam, sandy clay, clay, or silty clay or the mucky analogues of these textures

Cg horizon (lower part):
Hue—neutral or 10YR to 5BG
Value—2 to 7
Chroma—0 to 2
Texture—ranging from sand to clay and including the mucky analogues of these textures

Bojac Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy and sandy alluvial sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 6 percent

Associated Soils

- Altavista soils, which are moderately well drained and have more clay in the subsoil than the Bojac soils
- Conetoe soils, which are well drained and have sandy surface horizons that are thicker than those of the Bojac soils
- Munden soils, which are moderately well drained
- Roanoke soils, which are poorly drained and have more clay in the subsoil than the Bojac soils
- Seabrook soils, which are moderately well drained and have less clay than the Bojac soils
- State and Wickham soils, which have more clay in the subsoil than the Bojac soils
- Tarboro soils, which are well drained and have less clay than the Bojac soils
- Tomotley soils, which are poorly drained

Taxonomic Classification

Coarse-loamy, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Bojac fine sandy loam, 0 to 2 percent slopes; in an area of pine woodland, 1 mile east of the end of Highway VA-641 on the private Sandy Point Road, 230 yards west of Chesapeake research plots; elevation of 55 feet:

Ap—0 to 6 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; few fine mica flakes; slightly acid; clear smooth boundary.
E—6 to 12 inches; yellowish brown (10YR 5/6) fine sandy loam; weak fine subangular blocky structure; very friable, nonsticky, nonplastic; common fine and medium roots; few fine mica flakes; slightly acid; gradual smooth boundary.
Bt1—12 to 21 inches; strong brown (7.5YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; common fine roots; few faint clay bridges between sand grains; few fine mica flakes; slightly acid; gradual smooth boundary.

Bt2—21 to 40 inches; strong brown (7.5YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine roots; common distinct clay bridges between sand grains; few fine mica flakes; slightly acid; gradual smooth boundary.

Bt3—40 to 46 inches; reddish yellow (7.5YR 6/8) fine sandy loam; weak coarse subangular blocky structure; very friable, nonsticky, nonplastic; few fine roots; common distinct clay bridges between sand grains; few fine mica flakes; slightly acid; gradual smooth boundary.

C—46 to 65 inches; very pale brown (10YR 7/4) fine sand; single grain; loose; thin strata of yellowish brown (10YR 5/6) fine sandy loam; few fine mica flakes; moderately acid.

Range in Characteristics

Solum thickness: 30 to 65 inches

Rock fragments: 0 to 5 percent gravel in the A, E, BA, BE, Bt, and BC horizons; 0 to 15 percent gravel in the C horizon in nonflooded phases; 15 to 50 percent gravel throughout the profile in flooded phases

Soil reaction: Extremely acid to slightly acid, except in limed areas

Mica flakes: Few or common in most pedons

A horizon (if it occurs):

Hue—7.5YR to 2.5Y

Value—3 to 6; value of 3 occurs only where the horizon is less than 6 inches thick

Chroma—1 to 4; chroma of 1 or 2 occurs only where the horizon is less than 6 inches thick

Texture (fine-earth fraction)—loamy sand, sandy loam, or fine sandy loam

Ap horizon:

Hue—7.5YR to 2.5Y

Value—3 to 6; value of 3 occurs only where the horizon is less than 6 inches thick

Chroma—1 to 4; chroma of 1 or 2 occurs only where the horizon is less than 6 inches thick

Texture (fine-earth fraction)—loamy sand, sandy loam, or fine sandy loam

E horizon:

Hue—10YR or 2.5Y

Value—4 to 7

Chroma—4 or 6

Texture (fine-earth fraction)—loamy sand, sandy loam, fine sandy loam, or loam

BA and BE horizons (if they occur):

Hue—5YR to 2.5Y

Value—4 to 7

Chroma—3 to 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:

Hue—5YR to 10YR

Value—4 to 6

Chroma—4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam; thin subhorizons of sandy clay loam or clay loam are in some pedons

Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BC horizon (if it occurs):

Hue—5YR to 10YR

Value—4 to 6
Chroma—4 to 8
Texture (fine-earth fraction)—loamy sand or loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

C horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture (fine-earth fraction)—commonly stratified; ranging from coarse sand to loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Catpoint Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Sandy alluvial sediments
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 4 percent

Associated Soils

- Kenansville soils, which are well drained and have a loamy subsoil
- Osier soils, which are poorly drained
- Pactolus soils, which are moderately well drained

Taxonomic Classification

Thermic, coated Lamellic Quartzipsamments

Typical Pedon

Catpoint sand, 0 to 4 percent slopes; in an area of pine woodland, 0.28 mile south of Highway VA-632, about 80 yards east of a sand pit, in an area adjacent to Cohoke Mill Pond; elevation of 45 feet:

A—0 to 5 inches; very dark gray (10YR 3/1) sand; single grain; loose; common fine and few medium roots; slightly acid; clear wavy boundary.
Bw1—5 to 13 inches; yellowish brown (10YR 5/4) sand; single grain; loose; common fine and medium roots; slightly acid; clear wavy boundary.
Bw2—13 to 25 inches; yellowish brown (10YR 5/6) sand; single grain; loose; few fine and common medium roots; few fine mica flakes; slightly acid; diffuse smooth boundary.
Bw3—25 to 49 inches; yellowish brown (10YR 5/6) sand; single grain; loose; few fine and common medium roots; few fine mica flakes; strongly acid; clear smooth boundary.
E and Bt—49 to 72 inches; very pale brown (10YR 7/3) sand (E part); single grain; loose; yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) lamellae of loamy sand that are less than 1 inch thick each and have a cumulative thickness of less than 4 inches (Bt part); weak fine subangular blocky structure; few fine and medium roots; few fine mica flakes; 5 percent rounded quartz gravel; strongly acid.

Range in Characteristics

Thickness of sandy material: 80 inches or more
Soil reaction: Very strongly acid to slightly acid, except in limed areas
Rock fragments: 0 to 5 quartz gravel above a depth of 40 inches; 0 to 15 percent quartz gravel below a depth of 40 inches
Lamellae: Combined thickness of less than 6 inches; occurring above a depth of 60 inches

A horizon:
Hue—7.5YR to 2.5Y
Value—2 or 3
Chroma—1 to 4
Texture—sand, fine sand, loamy sand, or loamy fine sand

Ap horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—2 to 5
Chroma—3 or 4
Texture—sand, fine sand, loamy sand, or loamy fine sand

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand

E part of the E and Bt horizon:
Hue—10YR or 2.5Y
Value—6 to 8
Chroma—2 to 6
Texture—sand, fine sand, loamy sand, or loamy fine sand

Bt part (lamellae) of the E and Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—loamy sand or loamy fine sand

Conetoe Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy and sandy alluvial sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 4 percent

Associated Soils

- Bojac soils, which are well drained and have a loamy surface layer
- Munden and Seabrook soils, which are moderately well drained and have less clay throughout than the Conetoe soils
- Tarboro soils, which are well drained and have less clay throughout than the Conetoe soils

Taxonomic Classification

Loamy, mixed, semiactive, thermic Arenic Hapludults

Typical Pedon

Conetoe loamy fine sand, 0 to 4 percent slopes; in an area of mixed pines and hardwoods, 0.23 mile south of Highway VA-632, about 300 yards west of the Elsing Green Historical Home, on Elsing Green Farm; elevation of 35 feet:

Ap—0 to 6 inches; brown (10YR 4/3) loamy fine sand; weak fine granular structure; very friable; common fine, medium, and coarse roots; few very fine mica flakes; moderately acid; clear smooth boundary.

E1—6 to 20 inches; light yellowish brown (10YR 6/4) fine sand; single grain; loose; few medium and coarse roots; few very fine mica flakes; moderately acid; gradual smooth boundary.

E2—20 to 29 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine granular structure; very friable; few medium and coarse roots; few fine mica flakes; moderately acid; clear smooth boundary.

Bt—29 to 52 inches; brownish yellow (10YR 6/8) sandy loam; moderate medium subangular blocky structure; friable; few fine and medium roots; common distinct clay bridges between sand grains; few fine mica flakes; moderately acid; gradual smooth boundary.

BC—52 to 58 inches; brownish yellow (10YR 6/8) loamy fine sand; weak medium subangular blocky structure; very friable; yellowish brown (10YR 5/6) lamellae of sandy loam materials that are 1 inch thick; few fine mica flakes; moderately acid; clear wavy boundary.

C—58 to 80 inches; very pale brown (10YR 7/3) fine sand; single grain; loose; thin strata of yellowish brown (10YR 5/6) sandy loam materials that are 1 inch thick; common fine mica flakes; moderately acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Soil reaction: Very strongly acid to slightly acid, except in limed areas

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—1 to 3
Texture—sand, fine sand, loamy sand, or loamy fine sand

Ap horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—1 to 3
Texture—sand, fine sand, loamy sand, or loamy fine sand

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand

Bt horizon:
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, or sandy clay loam

BC horizon:
Hue—7.5YR or 10YR
Value—5 to 7

Chroma—3 to 8
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—5 to 8
Chroma—1 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand; thin strata of sandy loam or fine sandy loam occur in some pedons

Daleville Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy marine sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately low
Slope: 0 to 2 percent

Associated Soils

- Bama soils, which are well drained

Taxonomic Classification

Fine-loamy, siliceous, active, thermic Typic Paleaquults

Typical Pedon

Daleville silt loam, 0 to 2 percent slopes; in an area of mixed pines and hardwoods, 0.44 mile east of the King William County Landfill, 25 yards north of Highway VA-640; elevation of 120 feet:

A—0 to 5 inches; dark grayish brown (2.5Y 4/2) silt loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; many fine and medium roots; common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg1—5 to 15 inches; light brownish gray (10YR 6/2) loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; few faint clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/4) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Btg2—15 to 29 inches; gray (10YR 6/1) clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few faint clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; clear smooth boundary.

Btg3—29 to 44 inches; gray (10YR 6/1) sandy clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few faint clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; clear smooth boundary.

Btg4—44 to 65 inches; light gray (10YR 7/1) sandy clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; common pockets and lenses of clay; few faint clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Solum thickness: 60 to 80 inches or more
Soil reaction: Very strongly acid or strongly acid, except in limed areas

A horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 or 2
Texture—fine sandy loam, loam, or silt loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 or 2
Texture—fine sandy loam, loam, or silt loam

E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—fine sandy loam, loam, or silt loam

Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—loam, sandy clay loam, clay loam, or silty clay loam
Redoximorphic features—iron masses in shades of red, brown, or yellow

Emporia Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained and subject to flooding
- Eulonia and Nevarc soils, which are moderately well drained and have more clay in the subsoil than the Emporia soils
- Kempsville, Rumford, and Suffolk soils, which do not have iron depletions in the lower part of the subsoil
- Myatt soils, which are poorly drained
- Slagle soils, which are moderately well drained

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Emporia fine sandy loam, 2 to 6 percent slopes; in an area of mixed pines and hardwoods, 0.5 mile south of Hartfield on Highway VA-3, about 0.3 mile south on a private road, 50 feet east of the private road; elevation of 80 feet:

A—0 to 3 inches; light brownish gray (2.5Y 6/2) fine sandy loam; weak medium granular structure; very friable, nonsticky, nonplastic; many fine and medium roots; few fine tubular pores; slightly acid; clear smooth boundary.
E—3 to 16 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable, nonsticky, nonplastic; many fine and medium roots; few fine tubular pores; slightly acid; gradual smooth boundary.
Bt1—16 to 21 inches; light yellowish brown (10YR 6/4) and brownish yellow (10YR 6/6) loam; moderate medium subangular blocky structure; friable, moderately sticky, slightly plastic; common fine and few medium roots; many fine and medium tubular pores; few faint clay bridges between sand grains and clay films on surfaces along pores; very strongly acid; gradual smooth boundary.
Bt2—21 to 28 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; common fine and medium tubular pores; few faint clay films on surfaces along pores and on all faces of peds; common medium faint strong brown (7.5YR 5/6) masses of oxidized iron; very strongly acid; clear smooth boundary.
Bt3—28 to 45 inches; light yellowish brown (10YR 6/4) sandy clay loam; weak medium platy structure; firm, moderately sticky, moderately plastic; few fine roots; common fine and medium tubular pores; few faint clay films on all faces of peds and on surfaces along pores; few medium faint very pale brown (10YR 7/3) iron depletions and common medium distinct yellowish red (5YR 5/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.
Bt4—45 to 55 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium and coarse platy structure; very firm, moderately sticky, moderately plastic; common fine and medium tubular pores; few faint clay films on all faces of peds and on surfaces along pores; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron and common medium faint light gray (10YR 7/2) iron depletions; very strongly acid; gradual smooth boundary.
C—55 to 80 inches; strong brown (7.5YR 5/8) and red (2.5YR 4/8) clay loam; massive; firm, moderately sticky, moderately plastic; pockets of sandy loam; common coarse tubular pores; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid.

Range in Characteristics

Rock fragments: 0 to 5 percent gravel throughout the profile
Soil reaction: Very strongly acid to moderately acid, except in limed areas

A horizon:
Hue—10YR or 2.5Y
Value—2 to 6
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, or loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

BA or BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—4 to 6
Texture—sandy loam, fine sandy loam, or loam

Bt horizon (upper part):
Hue—5YR to 10YR
Value—4 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bt horizon (lower part):
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy clay or clay in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray below a depth of 36 inches

Btg horizon (if it occurs):
Hue—neutral or 5YR to 2.5Y
Value—4 to 6
Chroma—0 to 2
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy clay or clay in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

BC or BCg horizon (if it occurs):
Hue—neutral or 2.5YR to 2.5Y
Value—4 to 6
Chroma—0 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy clay or clay in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

C horizon:
Hue—2.5YR to 5Y
Value—3 to 8
Chroma—3 to 8
Texture—sandy loam to clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

Cg horizon (if it occurs):
Hue—neutral or 2.5YR to 5Y
Value—3 to 8
Chroma—0 to 2
Texture—sandy loam to clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

The Emporia soils in King William County are considered taxadjuncts to the series because they do not typically have a decrease in clay content with increasing depth. This difference, however, does not significantly affect the use and management of the soils.

Eulonia Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy and clayey marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Emporia soils, which are well drained and have less clay in the subsoil than the Eulonia soils
- Nevarc soils, which have a perched water table
- Slagle soils, which have less clay in the subsoil than the Eulonia soils

Taxonomic Classification

Fine, mixed, subactive, thermic Aquic Hapludults

Typical Pedon

Eulonia fine sandy loam, 0 to 2 percent slopes; in a cultivated field, 0.38 mile south of Highway VA-632, at the end of a private road to Cohoke Farm, 100 yards northeast of the Pamunkey River; elevation of 35 feet:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; friable, slightly sticky, nonplastic; many fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—7 to 17 inches; yellowish brown (10YR 5/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; common distinct clay films on all faces of peds; few fine distinct yellowish red (5YR 5/8) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Bt2—17 to 24 inches; yellowish brown (10YR 5/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; common distinct clay films on all faces of peds; few fine prominent yellowish red (5YR 5/6) masses of oxidized iron and common medium prominent light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.

Bt3—24 to 31 inches; brownish yellow (10YR 6/6) sandy clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; few faint clay films on all faces of peds; many medium prominent light gray (10YR 7/2) iron depletions; very strongly acid; gradual smooth boundary.

BCg—31 to 45 inches; light gray (10YR 7/1) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; thin strata of yellow (10YR 7/6) loamy sand material; common faint clay bridges between sand grains; many medium prominent brownish yellow (10YR 6/6) and strong brown (7.5YR 5/8) masses of oxidized iron; very strongly acid; clear wavy boundary.

C1—45 to 60 inches; brownish yellow (10YR 6/6) sandy loam; massive; very friable, nonsticky, nonplastic; many medium prominent light gray (10YR 7/2) iron depletions; very strongly acid; clear wavy boundary.

C2—60 to 75 inches; yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6)

sandy loam; massive; very friable, nonsticky, nonplastic; many fine prominent light gray (10YR 7/2) iron depletions; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 80 inches or more
Soil reaction: Very strongly acid to moderately acid, except in limed areas
Rock fragments: 0 to 3 percent gravel throughout the profile

A horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—fine sandy loam, loam, or silt loam

Ap horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 3
Texture—fine sandy loam, loam, or silt loam

Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—clay loam, sandy clay, or clay
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray

BCg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—sandy clay loam, clay loam, or sandy clay
Redoximorphic features—iron masses in shades of red, brown, or yellow; iron depletions in shades of gray or white

C horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—variable, ranging from sand to clay
Redoximorphic features—iron masses in shades of red, brown, or yellow; iron depletions in shades of gray or white

Cg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—variable, ranging from sand to clay
Redoximorphic features—iron masses in shades of red, brown, or yellow; iron depletions in shades of gray or white

Eunola Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy alluvial sediments

Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Myatt soils, which are poorly drained
- Nansemond soils, which have less clay in the subsoil than the Eunola soils
- Nevarc soils, which have more clay in the subsoil than the Eunola soils
- Osier soils, which are poorly drained and have less clay in the subsoil than the Eunola soils
- Suffolk soils, which are well drained

Taxonomic Classification

Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults

Typical Pedon

Eunola sandy loam, 0 to 2 percent slopes; in an area of mixed pines and hardwoods, 60 yards west of the end of Highway VA-624, about 25 yards north of a woodland road; elevation of 95 feet:

A—0 to 5 inches; brown (10YR 5/3) sandy loam; weak medium granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

E—5 to 10 inches; yellowish brown (10YR 5/4) sandy loam; moderate medium granular structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.

Bt1—10 to 25 inches; brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; very friable; common fine and few medium roots; few faint clay films on all faces of peds; very strongly acid; gradual smooth boundary.

Bt2—25 to 35 inches; yellowish brown (10YR 5/6) sandy clay loam; massive parting to weak medium subangular blocky structure; very friable; few fine and medium roots; few faint clay films on all faces of peds; few medium prominent light brownish gray (10YR 6/2) iron depletions and many medium distinct very pale brown (10YR 7/4) masses of oxidized iron; very strongly acid; clear smooth boundary.

Bt3—35 to 55 inches; brownish yellow (10YR 6/6) sandy clay loam; weak medium subangular blocky structure; very friable; few fine and medium roots; few faint clay films on all faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions; very strongly acid; gradual smooth boundary.

Cg—55 to 65 inches; light gray (10YR 7/1) sandy loam; massive; very friable; thin strata of sandy clay loam; many medium prominent strong brown (7.5YR 5/6) and many medium distinct very pale brown (10YR 7/4) masses of oxidized iron; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Soil reaction: Very strongly acid or strongly acid, except in limed areas
Rock fragments: 0 to 5 percent gravel throughout the profile

A horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture—sandy loam or fine sandy loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5

Chroma—1 to 4
Texture—sandy loam or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—sandy loam or fine sandy loam

Bt horizon (upper part):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown or yellow

Bt horizon (lower part):
Hue—10YR or 2.5Y
Value—4 to 8
Chroma—1 to 8
Texture—sandy loam, fine sandy loam, sandy clay loam, clay loam, or sandy clay
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray

BC or BCg horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—sandy loam, fine sandy loam, or sandy clay loam
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray or white

C or Cg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—sand, loamy sand, sandy loam, or fine sandy loam
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray or white

Kempsville Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Emporia soils, which have iron depletions in the lower part of the subsoil
- Myatt soils, which are poorly drained
- Rumford soils, which have less clay in the subsoil than the Kempsville soils
- Slagle soils, which are moderately well drained
- Suffolk soils, which have a solum that is thinner than that of the Kempsville soils

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Kempsville sandy loam, 2 to 6 percent slopes; in an area of mixed pines and hardwoods, 0.38 mile south of Highway VA-623 on a south road of Elsing Green Farm, 30 yards west of a lane; elevation of 75 feet:

A—0 to 3 inches; dark grayish brown (2.5Y 4/2) sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many medium and common coarse roots; common fine and medium tubular pores; very strongly acid; clear smooth boundary.

E—3 to 18 inches; yellowish brown (10YR 5/4) sandy loam; weak medium granular structure; very friable, nonsticky, nonplastic; many fine and medium roots; common fine and medium tubular pores; very strongly acid; clear smooth boundary.

Bt1—18 to 36 inches; strong brown (7.5YR 5/6) loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; common fine and medium tubular pores; few faint clay films on all faces of peds and common faint clay bridges between sand grains; common medium distinct very pale brown (10YR 7/4) iron depletions; very strongly acid; gradual wavy boundary.

Bt2—36 to 44 inches; yellowish red (5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; common fine and medium tubular pores; few faint clay films on all faces of peds and common faint clay bridges between sand grains; common medium distinct light yellowish brown (10YR 6/4) iron depletions; very strongly acid; gradual wavy boundary.

Bt3—44 to 60 inches; light yellowish brown (10YR 6/4) and yellowish red (5YR 5/6) sandy clay loam; weak medium and coarse subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; yellowish brown and pale brown part is firm and slightly compact in place; few fine and medium vesicular pores; few faint clay films on all faces of peds; common medium distinct pale brown (10YR 6/3) iron depletions; strongly acid; gradual wavy boundary.

Bt4—60 to 64 inches; strong brown (7.5YR 5/8) sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; firm in place; few faint discontinuous clay bridges between sand grains; few medium distinct pink (7.5YR 7/4) iron depletions; strongly acid; gradual smooth boundary.

Bt5—64 to 80 inches; strong brown (7.5YR 5/8) sandy clay loam; massive parting to weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; firm in place; few distinct clay bridges between sand grains; common medium distinct red (10R 4/8) and common medium faint reddish yellow (7.5YR 6/8) masses of oxidized iron; strongly acid.

Range in Characteristics

Solum thickness: 50 to 85 inches
Soil reaction: Very strongly acid to moderately acid, except in limed areas
Rock fragments: 0 to 15 percent throughout the profile

A horizon:
Hue—10YR or 2.5Y
Value—2 to 5
Chroma—2 to 4
Texture—sandy loam or fine sandy loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture—sandy loam or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 6
Texture—sandy loam or fine sandy loam

BA or BE horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 6
Texture—sandy loam or fine sandy loam

Bt horizon (upper part):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Bt horizon (lower part):
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Consistence—brittle and compact in as much as 40 percent of the mass
Redoximorphic features—iron masses in shades of brown or yellow

BC horizon (if it occurs):
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray (below a depth of 50 inches)

C horizon (if it occurs):
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loamy sand, sandy loam, fine sandy loam, loam, or sandy clay loam
Redoximorphic features—iron masses in shades of brown or yellow; iron depletions in shades of gray

The Kempsville soils in King William County are considered taxadjuncts to the series because they do not typically have a decrease in clay content with increasing depth. This difference, however, does not significantly afffect the use and management of the soils.

Kenansville Series

Physiographic province: Southern Coastal Plain
Landform: Marine and stream terraces

Parent material: Loamy alluvial or marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 4 percent

Associated Soils

- Catpoint soils, which are sandy throughout
- Emporia soils, which have a loamy surface layer
- Osier soils, which are poorly drained and sandy throughout
- Pactolus soils, which are moderately well drained and sandy throughout
- Slagle soils, which are moderately well drained and have a loamy surface layer

Taxonomic Classification

Loamy, siliceous, subactive, thermic Arenic Hapludults

Typical Pedon

Kenansville sand, 0 to 4 percent slopes; in an area of hardwoods, 0.95 mile north of the junction of Highways VA-30 and VA-600, about 0.38 mile east of Highway VA-600, adjacent to a woodland road; elevation of 115 feet:

A1—0 to 3 inches; dark grayish brown (10YR 4/2) sand; weak fine granular structure; very friable, nonsticky, nonplastic; many fine and medium and common coarse roots; strongly acid; abrupt smooth boundary.

A2—3 to 9 inches; brown (10YR 5/3) sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; strongly acid; clear smooth boundary.

E—9 to 34 inches; brownish yellow (10YR 6/6) loamy sand; weak medium granular structure; slightly hard; few fine and medium roots; strongly acid; clear smooth boundary.

Bt—34 to 45 inches; strong brown (7.5YR 5/6) sandy loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; common distinct clay bridges between sand grains; very strongly acid; gradual wavy boundary.

C1—45 to 64 inches; yellowish brown (10YR 5/6) loamy sand; massive; friable, slightly sticky, slightly plastic; few fine roots; very strongly acid; gradual wavy boundary.

C2—64 to 70 inches; brownish yellow (10YR 6/8) sand; single grain; loose; thin discontinuous strata of strong brown (7.5YR 5/6) sandy loam material; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches
Soil reaction: Very strongly acid to moderately acid, except in limed areas

A horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—1 to 4
Texture—sand, fine sand, or loamy sand

Ap horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—1 to 4
Texture—sand, fine sand, or loamy sand

E horizon:
Hue—10YR or 2.5Y
Value—5 to 8
Chroma—3 to 8
Texture—sand, fine sand, or loamy sand

BE horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 8
Chroma—3 to 8
Texture—loamy sand or sandy loam

Bt horizon:
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—4 to 8
Texture—sandy loam or fine sandy loam; horizon has layers of sandy clay loam in some pedons

BC horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—4 to 8
Texture—sand, loamy sand, sandy loam, or fine sandy loam

C horizon:
Hue—7.5YR or 10YR
Value—4 to 8
Chroma—1 to 8
Texture—sand or loamy sand

Kinston Series

Physiographic province: Southern Coastal Plain
Landform: Flood plains
Parent material: Loamy over sandy alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Bibb soils, which have less clay throughout than the Kinston soils
- Emporia and Suffolk soils, which are well drained and not subject to flooding
- Lanexa and Mattan soils, which are very poorly drained and formed in organic material
- Nevarc soils, which are moderately well drained and not subject to flooding
- Osier soils, which are sandy throughout
- Remlik soils, which have a sandy surface layer and are not subject to flooding

Taxonomic Classification

Fine-loamy, siliceous, semiactive, acid, thermic Typic Fluvaquents

Typical Pedon

Kinston fine sandy loam in an area of Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded; in an area of mixed hardwoods, about 100 yards north of Highway VA-626 and Cohoke Creek; elevation of 30 feet:

A—0 to 8 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable, slightly sticky, nonplastic; common fine, medium, and coarse roots; common fine and medium and few coarse tubular pores; 2 percent rounded quartz gravel; strongly acid; clear smooth boundary.

Bg1—8 to 14 inches; gray (10YR 6/1) fine sandy loam; weak fine granular structure; very friable, slightly sticky, nonplastic; few fine, medium, and coarse roots; common fine, medium, and coarse tubular pores; common medium prominent dark yellowish brown (10YR 4/6) masses of oxidized iron; 2 percent rounded quartz gravel; very strongly acid; clear smooth boundary.

Bg2—14 to 21 inches; gray (10YR 6/1) fine sandy loam; moderate fine and medium granular structure; friable, slightly sticky, slightly plastic; few fine and coarse roots; few fine feldspar and black mineral grains; common fine, medium, and coarse tubular pores; many medium prominent dark yellowish brown (10YR 4/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Bg3—21 to 43 inches; gray (10YR 6/1) sandy clay loam; weak fine and medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine and coarse roots; few sand-sized feldspar grains; few fine, medium, and coarse tubular pores; many coarse prominent yellowish brown (10YR 5/8) masses of oxidized iron; 3 percent rounded quartz gravel; very strongly acid; clear smooth boundary.

Cg—43 to 65 inches; gray (10YR 6/1) loamy sand; massive; very friable, nonsticky, nonplastic; few black mineral grains; 3 percent rounded quartz gravel; very strongly acid.

Range in Characteristics

Soil reaction: Very strongly acid or strongly acid, except in limed areas
Rock fragments: 0 to 3 percent gravel throughout the profile

A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 3
Texture—sandy loam, fine sandy loam, loam, or silt loam

Ag horizon (if it occurs):
Hue—neutral or 10YR
Value—5
Chroma—1
Texture—sandy loam, fine sandy loam, loam, or silt loam

Bg horizon:
Hue—neutral or 10YR to 5Y
Value—3 to 7
Chroma—1 or 2
Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown or yellow

Cg horizon:
Hue—neutral or 10YR to 5Y
Value—3 to 7
Chroma—1 or 2
Texture—sand, loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy textures commonly occur below a depth of 40 inches
Redoximorphic features—iron masses in shades of brown or yellow

Lanexa Series

Physiographic province: Southern Coastal Plain
Landform: Tidal marshes
Parent material: Herbaceous organic materials and clayey alluvial sediments
Drainage class: Very poorly drained
Slowest saturated hydraulic conductivity: Low
Slope: 0 to 1 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained and formed in mineral soil material
- Bohicket soils, which formed in mineral soil material and support salt-tolerant vegetation
- Mattan soils, which have more clay in the mineral layer than the Lanexa soils

Taxonomic Classification

Clayey, mixed, euic, thermic Terric Haplosaprists

Typical Pedon

Lanexa mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded; in an area of marshland, 0.25 mile south of the end of Highway VA-634, about 260 yards southeast of a boat landing, 25 yards north of the Pamunkey River; elevation of 2 feet:

A—0 to 26 inches; dark gray (5Y 4/1) mucky silty clay loam; massive; moderately sticky, slightly plastic; material flows easily between fingers when squeezed leaving a small residue and few fine fibrous roots; many fine live roots; moderate sulfur odor; extremely acid; clear smooth boundary.
Oa—26 to 48 inches; very dark grayish brown (10YR 3/2) muck; massive; slightly sticky, slightly plastic; about 5 percent fibers rubbed; material flows easily between fingers when squeezed; common fine roots and fibers; common lenses and pockets of clay loam; weak sulfur odor; very strongly acid; clear smooth boundary.
Cg1—48 to 60 inches; very dark grayish brown (10YR 3/2) mucky silty clay; massive; moderately sticky, slightly plastic; material flows easily between fingers when squeezed leaving a small residue and few fine fibrous roots; common pockets of sapric and hemic material; extremely acid; clear smooth boundary.
Cg2—60 to 80 inches; very dark grayish brown (10YR 3/2) mucky silty clay; massive; moderately sticky, slightly plastic; material flows easily between fingers when squeezed leaving a small residue and few fine fibrous roots; common pockets of sapric and hemic material; extremely acid.

Range in Characteristics

Thickness of organic layer: 16 to 51 inches
Soil reaction: Extremely acid to slightly acid in soil's natural state; upon drying, reaction is slightly more acid

A horizon:
Hue—neutral or 10YR to 5GY
Value—2 to 4
Chroma—0 to 2
Texture—mucky analogues of silt loam, silty clay loam, or silty clay
Redoximorphic features—iron masses in shades of red, yellow, or brown; iron depletions in shades of gray

Oa horizon:
Hue—neutral or 10YR to 5GY
Value—2 to 4

Chroma—0 to 2
Texture—dominantly sapric material; thin layers of hemic material occurs in some pedons

Cg horizon:
Hue—neutral or 10YR to 5GY
Value—2 to 5
Chroma—0 to 2
Texture—variable; commonly mucky silty clay; weighted average clay content in the particle-size control section is greater than 35 percent
Redoximorphic features—iron masses in shades of red, yellow, or brown; iron depletions in shades of gray

Mattan Series

Physiographic province: Southern Coastal Plain
Landform: Swamps
Parent material: Herbaceous organic materials and loamy alluvial sediments
Drainage class: Very poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 1 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained mineral soils
- Bohicket soils, which are mineral soils
- Lanexa soils, which have more clay in the mineral layer than the Mattan soils

Taxonomic Classification

Loamy, mixed, euic, thermic Terric Haplosaprists

Typical Pedon

Mattan mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded; in an area of water-tolerant hardwoods, 120 yards southwest of the end of Highway VA-623, on the Pamunkey Indian Reservation; elevation of 3 feet:

A—0 to 14 inches; gray (5Y 5/1) mucky silty clay loam; massive; moderately sticky, moderately plastic; few fine live roots; material flows easily between fingers when squeezed leaving a small residue of roots and woody fibric material; strongly acid; gradual smooth boundary.

Oa—14 to 40 inches; very dark grayish brown (10YR 3/2) rubbed muck, very dark gray (10YR 3/1) dry; massive; approximately 20 percent fibers; 10 percent woody fibric material remains after rubbing; 30 percent mineral material (field estimate); strongly acid; gradual wavy boundary.

Cg1—40 to 48 inches; very dark grayish brown (10YR 3/2) mucky loamy sand; massive; nonsticky, nonplastic; material flows easily between fingers when squeezed; common fine dead woody fibric materials; strongly acid; gradual smooth boundary.

Cg2—48 to 60 inches; dark gray (5Y 4/1) mucky sandy clay loam; massive; slightly sticky, slightly plastic; material flows easily between fingers when squeezed; strongly acid; gradual smooth boundary.

Cg3—60 to 80 inches; greenish gray (5G 5/1) sandy clay loam; massive; slightly sticky, slightly plastic; common medium prominent light olive brown (2.5Y 5/6) masses of oxidized iron; strongly acid.

Range in Characteristics

Thickness of organic layer: 16 to 51 inches
Soil reaction: Extremely acid to moderately acid in the soil's natural state; upon drying, reaction is slightly more acid
Organic materials: Dominantly sapric; hemic or fibric material, or both, occur in the surface and lower tiers in some pedons
Mineral materials: Less than 12 inches thick; occurring in the control section below the surface tier in some pedons

A horizon:
Hue—neutral or 7.5YR to 5G
Value—2 to 5
Chroma—0 to 3
Texture—mucky analogues of loam, silt loam, clay loam, or silty clay loam

O horizon:
Hue—neutral or 10YR to 5G
Value—2 to 4
Chroma—0 to 4
Texture—muck; dominantly sapric material but thin layers of hemic material occur in some pedons

Cg horizon:
Hue—neutral or 10YR to 5GY
Value—2 to 5
Chroma—0 to 2
Texture—commonly stratified; ranging from loamy sand to silty clay loam or the mucky analogues of these textures

Munden Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy and sandy alluvial sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Altavista soils, which have more clay in the subsoil than the Munden soils
- Bojac soils, which are well drained
- Conetoe soils, which are well drained and have a sandy surface layer
- Roanoke and Tomotley soils, which are poorly drained and have more clay in the subsoil than the Munden soils
- Seabrook soils, which are sandy throughout
- State and Wickham soils, which are well drained and have more clay in the subsoil than the Munden soils
- Tarboro soils, which are somewhat excessively drained and sandy throughout
- Wehadkee soils, which are poorly drained and subject to flooding

Taxonomic Classification

Coarse-loamy, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Munden loamy sand, 0 to 2 percent slopes; in an area of pine woodland, 1.5 miles

north of Highway VA-30 on the private Sandy Point Road, 0.19 mile west of Chesapeake research plots; elevation of 50 feet:

A—0 to 3 inches; dark grayish brown (10YR 4/2) loamy sand; moderate fine granular structure; very friable, nonsticky, nonplastic; many fine and medium roots; slightly acid; clear wavy boundary.

E—3 to 13 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine roots; slightly acid; gradual smooth boundary.

Bt1—13 to 19 inches; brownish yellow (10YR 6/6) sandy loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; few fine and medium roots; few faint clay films on all faces of peds and many distinct clay bridges between sand grains; strongly acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine and medium roots; common faint clay films on all faces of peds and many distinct clay bridges between sand grains; few fine mica flakes; very strongly acid; clear smooth boundary.

Bt3—24 to 31 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine roots; few small pockets of sand as much as $1^1/_2$ inches in diameter; few faint clay films on all faces of peds and many distinct clay bridges between sand grains; few medium distinct strong brown (7.5YR 5/6) masses of oxidized iron; few fine mica flakes; very strongly acid; clear smooth boundary.

Bt4—31 to 44 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few fine roots; many distinct clay bridges between sand grains; few fine prominent light gray (10YR 7/2) iron depletions and common medium distinct yellowish red (5YR 5/6) and very pale brown (10YR 7/4) masses of oxidized iron; few fine mica flakes; common grains of feldspar; strongly acid; gradual smooth boundary.

C—44 to 60 inches; yellowish brown (10YR 5/6) and very pale brown (10YR 7/4) sand; single grain; loose; common grains of feldspar; few fine mica flakes; strongly acid.

Range in Characteristics

Solum thickness: 25 to 50 inches or more
Soil reaction: Very strongly acid to moderately acid, except in limed areas

A horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

BA or BE horizon (if it occurs):
Hue—10YR or 2.5Y

Value—5 or 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

Bt horizon (upper part):
Hue—7.5YR to 2.5Y
Value—3 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, or loam; ranging to sandy clay loam in some subhorizons
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bt horizon (lower part):
Hue—7.5YR to 2.5Y
Value—3 to 8
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, or loam; ranging to sandy clay loam in some subhorizons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Btg horizon (if it occurs):
Hue—neutral or 7.5YR to 2.5Y
Value—3 to 6
Chroma—0 to 2
Texture—sandy loam, fine sandy loam, or loam; ranging to sandy clay loam in some subhorizons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BC or BCg horizon (if it occurs):
Hue—neutral or 7.5YR to 2.5Y
Value—3 to 6
Chroma—0 to 8
Texture—loamy sand, sandy loam, fine sandy loam, or loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

C or Cg horizon:
Hue—neutral or 7.5YR to 5Y
Value—5 to 7
Chroma—0 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand; thin strata ranging from sandy loam to silty clay loam in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Myatt Series

Physiographic province: Southern Coastal Plain
Landform: Marine and stream terraces
Parent material: Loamy and sandy alluvial or marine sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Emporia, Kempsville, Rumford, and Suffolk soils, which are well drained
- Eunola, Nansemond, and Slagle soils, which are moderately well drained

Taxonomic Classification

Fine-loamy, siliceous, active, thermic Typic Endoaquults

Typical Pedon

Myatt loam, 0 to 2 percent slopes; in an area of mixed hardwoods, 0.28 mile north of the junction of Highways US-360 and VA-648, about 30 yards east of Highway VA-648; elevation of 130 feet:

A—0 to 7 inches; very dark grayish brown (10YR 3/2) loam; moderate medium granular structure; very friable, slightly sticky, slightly plastic; many fine and medium and common coarse roots; common fine and medium tubular pores; few fine mica flakes; very strongly acid; clear smooth boundary.

Eg—7 to 15 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate fine and medium granular structure; very friable, slightly sticky, nonplastic; common fine and medium and few coarse roots; common fine and medium and few coarse tubular pores; few fine mica flakes; very strongly acid; gradual smooth boundary.

Btg1—15 to 31 inches; dark gray (10YR 4/1) sandy clay loam; weak coarse subangular blocky structure; friable, moderately sticky, moderately plastic; common fine and few medium roots; common fine and medium tubular pores; common distinct clay films on all faces of peds and many distinct clay bridges between sand grains; common fine prominent yellowish brown (10YR 5/6) and common fine distinct dark yellowish brown (10YR 4/4) masses of oxidized iron; few fine mica flakes; strongly acid; clear smooth boundary.

Btg2—31 to 40 inches; dark gray (10YR 4/1) sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine and medium roots; common fine and medium tubular pores; common distinct clay films on all faces of peds and many distinct clay bridges between sand grains; common medium faint gray (10YR 6/1) iron depletions; few fine mica flakes; strongly acid; gradual wavy boundary.

Cg—40 to 65 inches; gray (10YR 5/1) coarse sand; single grain; loose; few fine mica flakes; few fine black mineral grains and weathered feldspar crystals; 5 percent rounded quartz gravel; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches

Soil reaction: Very strongly acid to moderately acid in the A and Eg horizons and in the upper part of the Btg horizon, except in limed areas; extremely acid to strongly acid in the lower part of the Btg horizon and in the Cg horizon

Rock fragments: 0 to 3 percent in the A, E, and Btg horizons; 5 to 25 percent in the Cg horizon

A horizon:

Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 or 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):

Hue—10YR or 2.5Y
Value—3 to 6

Chroma—1 or 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 or 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Btg horizon:
Hue—neutral or 10YR to 5Y
Value—3 to 7
Chroma—0 to 2
Texture—fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of red, brown, or yellow; iron depletions in shades of gray

Cg horizon:
Hue—neutral or 10YR to 5Y
Value—5 to 7
Chroma—0 to 2
Texture (fine-earth fraction)—sand, coarse sand, sandy loam, fine sandy loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of red, brown, or yellow; iron depletions in shades of gray

Nansemond Series

Physiographic province: Southern Coastal Plain
Landform: Marine and stream terraces
Parent material: Loamy and sandy alluvial or marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 2 percent

Associated Soils

- Eunola soils, which have more clay in the subsoil than the Nansemond soils
- Myatt soils, which are poorly drained and have more clay in the subsoil than the Nansemond soils
- Rumford soils, which are well drained
- Suffolk soils, which are well drained and have more clay in the subsoil than the Nansemond soils

Taxonomic Classification

Coarse-loamy, siliceous, subactive, thermic Aquic Hapludults

Typical Pedon

Nansemond loamy fine sand, 0 to 2 percent slopes; in a cultivated field, 0.3 mile north of the junction of Highways VA-607 and VA-608, on the west side of Highway VA-607; elevation of 155 feet:

A—0 to 8 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable, nonsticky, nonplastic; many fine roots; slightly acid; clear smooth boundary.
E—8 to 16 inches; yellowish brown (10YR 5/4) loamy fine sand; weak fine granular

structure; very friable, nonsticky, nonplastic; common fine roots; strongly acid; gradual smooth boundary.

Bt1—16 to 28 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; few fine and medium roots; few distinct clay bridges between sand grains; strongly acid; clear smooth boundary.

Bt2—28 to 42 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; few distinct clay bridges between sand grains; many medium distinct very pale brown (10YR 7/4) masses of oxidized iron and many medium prominent light gray (10YR 7/2) iron depletions; very strongly acid; clear smooth boundary.

C—42 to 60 inches; yellowish brown (10YR 5/6) loamy sand; single grain; loose; many medium prominent light gray (10YR 7/2) iron depletions and many medium distinct very pale brown (10YR 7/4) masses of oxidized iron; strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to moderately acid, except in limed areas
Rock fragment content: 0 to 5 percent gravel in the A and E horizons; 0 to 35 percent gravel in the BE, Bt, and C horizons

A horizon:
Hue—10YR or 2.5Y
Value—3 or 4
Chroma—1 to 4
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—1 to 4
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

E horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

BE horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture (fine-earth fraction)—sandy loam or fine sandy loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture (fine-earth fraction)—sandy loam or fine sandy loam; ranging to loam or sandy clay loam in some thin subhorizons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray in the lower part of horizon

BC and BCg horizons (if they occur):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 to 8

Texture (fine-earth fraction)—loamy sand, loamy fine sand, or sandy loam; pockets of clean sand occur in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray occur in the lower part of horizon

C or Cg horizon:
Hue—neutral or 7.5YR to 5Y
Value—4 to 8
Chroma—0 to 8
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand; thin strata of sandy loam or sandy clay loam in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray in the lower part of horizon

Nevarc Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Clayey marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Slope: 6 to 60 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained and subject to flooding
- Emporia and Suffolk soils, which are well drained and have less clay in the subsoil than the Nevarc soils
- Eulonia soils, which have an apparent water table
- Osier soils, which are poorly drained and sandy throughout
- Remlik soils, which are well drained and have thick, sandy surface layers

Taxonomic Classification

Fine, mixed, subactive, thermic Aquic Hapludults

Typical Pedon

Nevarc sandy loam in an area of Remlik and Nevarc soils, 15 to 60 percent slopes; in an area of mixed hardwoods, 0.23 mile east of a gate along a private road to Sandy Point Campground, 100 yards north of the road; elevation of 90 feet:

A—0 to 6 inches; grayish brown (10YR 5/2) sandy loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many fine and medium roots; extremely acid; clear smooth boundary.
Bt1—6 to 22 inches; pale brown (10YR 6/3) clay loam; weak fine subangular blocky structure; friable, moderately sticky, moderately plastic; many fine and medium roots; common faint patchy clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; clear smooth boundary.
Bt2—22 to 40 inches; yellowish brown (10YR 5/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; many fine and medium roots; many faint patchy clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron and common medium prominent light gray (10YR 7/1) iron depletions; extremely acid; gradual smooth boundary.

Cg—40 to 60 inches; pinkish gray (7.5YR 7/2) clay; massive; firm, moderately sticky, moderately plastic; pockets of sandy clay; common medium distinct strong brown (7.5YR 5/6) and red (2.5YR 4/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to moderately acid, except in limed areas
Rock fragments: 0 to 15 percent gravel in the A, E, Bt, and BC horizons; 0 to 35 percent in the C horizon

A horizon:
Hue—7.5YR to 2.5Y
Value—2 to 6
Chroma—2 to 4
Texture—sandy loam, fine sandy loam, loam, or silt loam

E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, or silt loam

BA or BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 to 8
Texture—loam or clay loam

Bt horizon (upper part):
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 to 8
Texture—sandy clay loam, clay loam, silty clay loam, sandy clay, clay, or silty clay
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bt horizon (lower part):
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—sandy clay loam, clay loam, silty clay loam, sandy clay, clay, or silty clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BC or BCg horizon (if it occurs):
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—1 to 8
Texture—sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, or clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

C or Cg horizon:
Hue—5YR to 2.5Y
Value—4 to 7
Chroma—1 to 8
Texture—variable, commonly stratified and ranging from sand to clay
Redoximorphic features—shades of brown, yellow, red, olive, or gray

Osier Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Sandy alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 2 percent

Associated Soils

- Bibb and Kinston soils, which have more clay throughout than the Osier soils
- Catpoint soils, which are well drained and not subject to flooding
- Eunola soils, which are moderately well drained and have more clay throughout than the Osier soils
- Kenansville soils, which are well drained and have a thick, sandy surface layer and a loamy subsoil
- Pactolus soils, which are moderately well drained and not subject to flooding

Taxonomic Classification

Siliceous, thermic Typic Psammaquents

Typical Pedon

Osier loamy fine sand, 0 to 2 percent slopes, rarely flooded; in an area of mixed hardwoods, 0.6 mile east of the junction of Highways VA-600 and VA-647, along a private lane, 230 yards from the river; elevation of 15 feet:

A—0 to 7 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable; many fine roots; very strongly acid; clear wavy boundary.

Cg1—7 to 16 inches; light brownish gray (2.5Y 6/2) loamy fine sand; single grain; loose; common fine roots; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; extremely acid; gradual wavy boundary.

Cg2—16 to 30 inches; light gray (2.5Y 7/2) loamy fine sand; single grain; loose; common fine roots; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron; extremely acid; gradual wavy boundary.

Cg3—30 to 60 inches; light gray (2.5Y 7/1) sand; single grain; loose; few fine roots; many medium prominent light yellowish brown (10YR 6/4) masses of oxidized iron; very strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to moderately acid, except in limed areas

A horizon:
Hue—10YR or 2.5Y
Value—2 to 5; value of 2 or 3 occurs only where horizon is less than 10 inches thick
Chroma—1 or 2
Texture—sand, fine sand, loamy sand, or loamy fine sand

Cg horizon:
Hue—10YR to 5Y
Value—3 to 8
Chroma—1 or 2
Texture—sand, fine sand, loamy sand, or loamy fine sand; in some pedons coarse sand occurs in the lower part of horizon

Pactolus Series

Physiographic province: Southern Coastal Plain
Landform: Marine and stream terraces
Parent material: Sandy alluvial or marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 2 percent

Associated Soils

- Catpoint soils, which are well drained
- Kenansville soils, which are well drained and have a loamy subsoil
- Osier soils, which are poorly drained and subject to flooding

Taxonomic Classification

Thermic, coated Aquic Quartzipsamments

Typical Pedon

Pactolus loamy sand, 0 to 2 percent slopes; in an open field, 1.4 miles south of the junction of Highways VA-30 and US-360, on the east side of Highway US-360, about 0.6 mile along a lane to a low area; elevation of 170 feet:

A—0 to 11 inches; brown (10YR 4/3) loamy sand; moderate fine granular structure; very friable; common fine roots; moderately acid; clear smooth boundary.
C1—11 to 24 inches; light yellowish brown (10YR 6/4) loamy sand; single grain; loose; few fine roots; strongly acid; gradual smooth boundary.
C2—24 to 33 inches; light olive brown (2.5Y 5/4) loamy sand; single grain; loose; few fine roots; common medium distinct light gray (2.5Y 7/2) iron depletions; strongly acid; gradual smooth boundary.
Cg—33 to 60 inches; light gray (2.5Y 7/2) sand; single grain; loose; few fine roots; pockets of yellowish brown (10YR 5/6) sandy loam or loamy sand; strongly acid.

Range in Characteristics

Thickness of sandy material: 80 inches or more
Soil reaction: Extremely acid to strongly acid, except in limed areas
Control section: 10 to 25 percent silt plus clay

A horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 4
Texture—sand, fine sand, loamy sand, or loamy fine sand

C horizon (upper part):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand

C horizon (lower part):
Hue—10YR or 2.5Y
Value—5 to 8
Chroma—3 or 4
Texture—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of yellow, brown, or red; iron depletions in shades of gray

Cg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of yellow, brown, or red; iron depletions in shades of gray

Remlik Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy and sandy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 6 to 60 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained and subject to flooding
- Suffolk soils, which have a loamy surface layer

Taxonomic Classification

Loamy, siliceous, subactive, thermic Arenic Hapludults

Typical Pedon

Remlik loamy sand in an area of Remlik and Nevarc soils, 15 to 60 percent slopes; in an area of mixed hardwoods, 130 yards north of the junction of Highways VA-30 and VA-629; elevation of 85 feet:

A—0 to 4 inches; brown (10YR 5/3) loamy sand; massive parting to single grain; very friable, nonsticky, nonplastic; common fine and few medium roots; strongly acid; abrupt smooth boundary.
E—4 to 22 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; strongly acid; clear wavy boundary.
Bt—22 to 38 inches; strong brown (7.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine and medium roots; common faint clay bridges between sand grains; strongly acid; gradual smooth boundary.
BC—38 to 70 inches; strong brown (7.5YR 5/6) sandy loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few faint clay bridges between sand grains; strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Soil reaction: Extremely acid to moderately acid, except in limed areas
Rock fragments: 0 to 35 percent gravel throughout the profile

A horizon:
Hue—10YR or 2.5Y
Value—2 to 5
Chroma—2 to 4
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand

E horizon:
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—3 to 8
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand

EB horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture (fine-earth fraction)—loamy sand or loamy fine sand

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or sandy clay loam

BC horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—2 to 8
Texture (fine-earth fraction)—sand, loamy sand, or loamy fine sand

Riverview Series

Physiographic province: Southern Coastal Plain
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Altavista soils, which are moderately well drained and not subject to flooding
- Seabrook soils, which are moderately well drained, are sandy throughout, and are not subject to flooding
- Tarboro soils, which are sandy throughout and not subject to flooding
- Wehadkee soils, which are poorly drained

Taxonomic Classification

Fine-loamy, mixed, active, thermic Fluventic Dystrudepts

Typical Pedon

Riverview loamy fine sand, 0 to 2 percent slopes, frequently flooded; in a cultivated field, 270 yards southeast of Highway VA-614 at the Hanover County bridge, 50 yards north of the Pamunkey River; elevation of 38 feet:

A—0 to 12 inches; brown (10YR 4/3) loamy fine sand; massive parting to weak fine granular structure; very friable; common fine roots; common fine mica flakes; strongly acid; gradual smooth boundary.

Bw1—12 to 21 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium granular structure; very friable; common fine roots; common fine mica flakes; strongly acid; clear smooth boundary.

Bw2—21 to 30 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; common fine and few medium roots; common fine mica flakes; strongly acid; gradual smooth boundary.

Bw3—30 to 39 inches; yellowish brown (10YR 5/6) loam; weak medium subangular blocky structure; friable; common fine and few medium roots; common medium prominent light gray (10YR 7/2) iron depletions; common fine mica flakes; strongly acid; gradual smooth boundary.

Bw4—39 to 50 inches; strong brown (7.5YR 5/6) loam; moderate medium subangular blocky structure; friable; few fine roots; common medium prominent light gray (10YR 7/2) iron depletions; few fine mica flakes; strongly acid; gradual smooth boundary.

C—50 to 65 inches; strong brown (7.5YR 5/6) loam; massive; friable; many medium prominent gray (10YR 6/1) iron depletions; common fine mica flakes; strongly acid.

Range in Characteristics

Solum thickness: 24 to 60 inches

Soil reaction: Very strongly acid to slightly acid in the A horizon, except in limed areas; very strongly acid to moderately acid in the Bw, BC, and C horizons

Mica flakes: None to common the A, E, and B horizons; few or common in the C horizon

A horizon:

Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam, or silt loam

Ap horizon (if it occurs):

Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 4
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam, or silt loam

Bw horizon:

Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 8
Texture—fine sandy loam, loam, silt loam, sandy clay loam, clay loam, or silty clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray (below a depth of 24 inches)

BC horizon (if it occurs):

Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

C horizon:
Hue—7.5YR or 10YR
Value—4 to 8
Chroma—4 to 8
Texture—sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

Roanoke Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Clayey alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately low
Slope: 0 to 2 percent

Associated Soils

- Altavista and Munden soils, which are moderately well drained and have less clay in the subsoil than the Roanoke soils
- Bojac, State, and Wickham soils, which are well drained and have less clay in the subsoil than the Roanoke soils
- Tomotley soils, which have less clay in the subsoil than the Roanoke soils

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Endoaquults

Typical Pedon

Roanoke silt loam, 0 to 2 percent slopes; in an area of pine woodland, 2.0 miles south of the junction of Highways VA-30 and VA-632, about 0.28 mile east of Highway VA-632, at the end of the Chesapeake Corporation road; elevation of 23 feet:

A—0 to 2 inches; very dark brown (10YR 2/2) silt loam; weak medium granular structure; friable, slightly sticky, slightly plastic; many fine and medium and common coarse roots; strongly acid; clear smooth boundary.

Eg—2 to 12 inches; light brownish gray (10YR 6/2) silt loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many fine and medium and common coarse roots; many medium faint pale brown (10YR 6/3) iron depletions; strongly acid; clear smooth boundary.

Btg1—12 to 23 inches; gray (10YR 5/1) clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine and few medium and coarse roots; many faint clay films on all faces of peds; common medium distinct very pale brown (10YR 7/4) and yellowish brown (10YR 5/4) masses of oxidized iron; strongly acid; gradual wavy boundary.

Btg2—23 to 35 inches; gray (10YR 6/1) clay; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine and medium roots; common faint clay films on all faces of peds; common medium prominent yellow (10YR 7/6) and common medium distinct yellowish brown (10YR 5/4) masses of oxidized iron; very strongly acid; clear smooth boundary.

Btg3—35 to 46 inches; gray (10YR 6/1) clay; moderate medium subangular blocky

structure; firm, moderately sticky, moderately plastic; few fine roots; common faint clay films on all faces of peds; common medium prominent yellow (10YR 7/6) and common medium distinct yellowish brown (10YR 5/4) masses of oxidized iron; very strongly acid; clear smooth boundary.

Cg1—46 to 54 inches; gray (10YR 5/1) loamy sand; massive; very friable, nonsticky, nonplastic; common fine roots; pockets of clay; many medium prominent yellow (10YR 7/6) and yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid; gradual smooth boundary.

Cg2—54 to 65 inches; gray (10YR 5/1) sandy clay loam; massive; very friable, slightly sticky, slightly plastic; few fine roots; pockets of loamy sand; many medium prominent yellowish brown (10YR 5/6) and yellow (10YR 7/6) masses of oxidized iron and many medium faint light brownish gray (10YR 6/2) iron depletions; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches

Soil reaction: Extremely acid to strongly acid in the A, Eg, BAg, BEg, Btg, and BCg horizons, except in limed areas; extremely acid to slightly acid in the Cg horizon

Rock fragments: 0 to 10 percent gravel in the A, Eg, BAg, BEg, Btg, and BCg horizons; 0 to 15 percent gravel in the Cg horizon

Mica flakes: Few or common in most pedons

A horizon:
Hue—neutral or 10YR to 5Y
Value—2 to 6
Chroma—0 to 2
Texture—fine sandy loam, loam, or silt loam

Ap horizon (if it occurs):
Hue—neutral or 10YR to 5Y
Value—2 to 6
Chroma—0 to 2
Texture—fine sandy loam, loam, or silt loam

Eg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—fine sandy loam, loam, or silt loam

BAg or BEg horizon (if it occurs):
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—loam, silt loam, clay loam, or silty clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Btg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—clay loam, silty clay loam, silty clay, or clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BCg horizon (if it occurs):
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—sandy clay loam, clay loam, silty clay loam, or clay; strata of coarser material in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Cg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—stratified sand to clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Rumford Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy and sandy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 6 percent

Associated Soils

- Emporia, Kempsville, and Suffolk soils, which have more clay in the subsoil than the Rumford soils
- Myatt soils, which are poorly drained and have more clay in the subsoil than the Rumford soils
- Nansemond soils, which are moderately well drained
- Slagle soils, which are moderately well drained and have more clay in the subsoil than the Rumford soils

Taxonomic Classification

Coarse-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Rumford sandy loam in an area of Suffolk and Rumford soils, 2 to 6 percent slopes; in a grassed area, 0.38 mile west of Highway VA-632, adjacent to Cohoke Mill Pond and a borrow pit; elevation of 40 feet:

Ap—0 to 7 inches; dark brown (10YR 3/3) sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; slightly acid; abrupt smooth boundary.
BA—7 to 15 inches; brown (7.5YR 5/4) sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; common fine and medium roots; slightly acid; gradual smooth boundary.
Bt—15 to 30 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine and few medium roots; few faint clay films on all faces of peds; moderately acid; clear wavy boundary.
BC—30 to 37 inches; strong brown (7.5YR 5/6) loamy sand; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; common fine roots; few faint clay bridges between sand grains; strongly acid; clear wavy boundary.

C1—37 to 43 inches; brownish yellow (10YR 6/6) sand; single grain; loose; few fine roots; strongly acid; clear smooth boundary.
C2—43 to 65 inches; yellow (10YR 7/6) and very pale brown (10YR 8/2) sand; single grain; loose; few fine roots; 10 percent rounded quartz gravel; strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to strongly acid in the A and E horizons, except in limed areas; extremely acid to moderately acid in the BA, BE, Bt, and BC horizons; extremely acid to slightly acid in the C horizon
Rock fragments: 0 to 15 percent in the A, E, BA, BE, Bt, and BC horizons; 0 to 50 percent in the C horizon

A horizon (if it occurs):
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

Ap horizon:
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—3 or 4
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

BA or BE horizon:
Hue—5YR to 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture—loamy sand, sandy loam, or fine sandy loam

Bt horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, or sandy clay loam

BC horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

C horizon:
Hue—10YR or 2.5Y
Value—5 to 8
Chroma—2 to 8
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand

Seabrook Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces

Parent material: Sandy alluvial sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 2 percent

Associated Soils

- Bojac soils, which are well drained and have more clay in the subsoil than the Seabrook soils
- Conetoe soils, which are well drained and have thick, sandy surface layers
- Munden soils, which have more clay in the subsoil than the Seabrook soils
- Riverview soils, which are well drained and subject to flooding
- Tarboro soils, which are somewhat excessively drained
- Wehadkee soils, which are poorly drained and subject to flooding

Taxonomic Classification

Mixed, thermic Aquic Udipsamments

Typical Pedon

Seabrook loamy fine sand, 0 to 2 percent slopes; in an area of mixed hardwoods and pines, 0.5 mile south of the end of Highway VA-630, about 70 yards southeast of the entrance to Johnson Farm; elevation of 18 feet:

A—0 to 4 inches; brown (10YR 5/3) loamy fine sand; weak fine granular structure; very friable; many fine and common medium roots; many fine and common medium tubular pores; few fine mica flakes; strongly acid; clear smooth boundary.

C1—4 to 22 inches; brownish yellow (10YR 6/6) loamy fine sand; single grain; loose; common medium roots; few fine tubular pores; few fine mica flakes; very strongly acid; gradual smooth boundary.

C2—22 to 30 inches; light yellowish brown (10YR 6/4) loamy fine sand; massive; very friable; few fine and medium roots; few fine tubular pores; few fine mica flakes; very strongly acid; gradual smooth boundary.

C3—30 to 41 inches; light yellowish brown (10YR 6/4) loamy fine sand; massive; very friable; few fine and medium roots; few fine tubular pores; few fine distinct light gray (10YR 7/2) iron depletions and common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine mica flakes; strongly acid; clear smooth boundary.

C4—41 to 47 inches; pale yellow (2.5Y 7/4) sand; single grain; loose; few fine roots; few fine distinct light gray (10YR 7/2) iron depletions and many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; common fine mica flakes; strongly acid; clear smooth boundary.

Cg—47 to 72 inches; light brownish gray (2.5Y 6/2) sand; single grain; loose; few fine roots; many medium prominent yellowish brown (10YR 5/6) and yellowish red (5YR 4/6) masses of oxidized iron; few medium mica flakes; strongly acid.

Range in Characteristics

Thickness of sandy horizon: 72 inches or more
Soil reaction: Extremely acid to slightly acid, except in limed areas
Rock fragments: 0 to 15 percent gravel above a depth of 40 inches; 0 to 35 percent below a depth of 40 inches
Mica flakes: None to common

A horizon:
Hue—10YR or 2.5Y
Value—3 to 5

Chroma—2 to 4
Texture—sand, fine sand, loamy sand, or loamy fine sand

C horizon (upper part):
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—3 to 8
Texture—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red

C horizon (lower part):
Hue—10YR to 5Y
Value—5 to 7
Chroma—3 or 4
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Cg horizon:
Hue—10YR to 5Y
Value—5 to 7
Chroma—1 or 2
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Slagle Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy marine sediments
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Slope: 0 to 6 percent

Associated Soils

- Emporia soils, which are well drained and have iron depletions at greater depths in the subsoil than the Slagle soils
- Eulonia soils, which have more clay in the subsoil than the Slagle soils
- Kempsville and Suffolk soils, which are well drained
- Myatt soils, which are poorly drained
- Rumford soils, which are well drained and have less clay in the subsoil than the Slagle soils

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Aquic Hapludults

Typical Pedon

Slagle loam, 0 to 2 percent slopes; in an area of mixed hardwoods and pines, 0.47 mile west of the junction of Highways VA-623 and VA-632, about 200 yards south of Highway VA-632; elevation of 95 feet:

A—0 to 2 inches; very dark grayish brown (10YR 3/2) loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many fine and medium roots; strongly acid; clear smooth boundary.

E—2 to 14 inches; very pale brown (10YR 7/4) loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many fine and medium and few coarse roots; strongly acid; gradual wavy boundary.

Bt1—14 to 24 inches; brownish yellow (10YR 6/6) clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; many fine roots; few faint clay films on all faces of peds; strongly acid; gradual wavy boundary.

Bt2—24 to 34 inches; yellowish brown (10YR 5/6) clay loam; weak fine subangular blocky structure; firm, moderately sticky, moderately plastic; few fine and medium roots; few faint clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron and common medium distinct pale brown (10YR 6/3) iron depletions; strongly acid; gradual wavy boundary.

Bt3—34 to 48 inches; light yellowish brown (10YR 6/4), yellowish brown (10YR 5/6), and brownish yellow (10YR 6/8) clay loam; weak fine subangular blocky structure; firm, moderately sticky, moderately plastic; many fine and medium roots; few faint clay films on all faces of peds; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid; gradual wavy boundary.

Btg—48 to 62 inches; light gray (10YR 7/1) sandy clay loam; weak fine subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; common coarse distinct pale brown (10YR 6/3) iron depletions and common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; very strongly acid.

Range in Characteristics

Soil reaction: Extremely acid to strongly acid, except in limed areas
Rock fragments: 0 to 5 percent gravel throughout the profile

A horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 to 4
Texture—sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—10YR or 2.5Y
Value—2 to 6
Chroma—1 to 4
Texture—sandy loam, fine sandy loam, or loam

E horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 or 4
Texture—sandy loam, fine sandy loam, or loam

BA or BE horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

Bt horizon (upper part):
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bt horizon (lower part):
Hue—7.5YR to 5Y
Value—4 to 7
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Btg horizon:
Hue—7.5YR to 5Y
Value—4 to 7
Chroma—1 or 2
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BC or BCg horizon (if it occurs):
Hue—7.5YR to 5Y
Value—4 to 7
Chroma—1 to 8
Texture—sandy loam, fine sandy loam, sandy clay loam, clay loam, sandy clay, or clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

C or Cg horizon (if it occurs):
Hue—7.5YR to 5Y
Value—4 to 7
Chroma—1 to 8
Texture—loamy sand to clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

State Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy and sandy alluvial sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Altavista soils, which are moderately well drained
- Bojac soils, which have less clay in the subsoil than the State soils
- Munden soils, which are moderately well drained and have less clay in the subsoil than the State soils
- Roanoke soils, which are poorly drained and have more clay in the subsoil than the State soils
- Tomotley soils, which are poorly drained
- Wickham soils, which have a reddish brown subsoil

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

State loamy fine sand, 0 to 2 percent slopes; in an area of open land, 0.4 mile south of Highway VA-632, on Elsing Green Farm; elevation of 35 feet:

Ap—0 to 10 inches; yellowish brown (10YR 5/4) loamy fine sand; weak medium granular structure; very friable, nonsticky, nonplastic; common fine and few medium roots; moderately acid; abrupt smooth boundary.
BE—10 to 13 inches; yellowish brown (10YR 5/6) fine sandy loam; moderate medium granular structure; friable, nonsticky, nonplastic; few fine and medium roots; strongly acid; gradual smooth boundary.
Bt1—13 to 18 inches; strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; few fine and medium roots; many fine and medium tubular pores; few faint clay films on all faces of peds; few fine mica flakes; 1 percent rounded quartz gravel; strongly acid; gradual smooth boundary.
Bt2—18 to 33 inches; strong brown (7.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium tubular pores; few faint clay films on all faces of peds; common fine mica flakes; 1 percent rounded quartz gravel; strongly acid; gradual wavy boundary.
BC—33 to 50 inches; strong brown (7.5YR 5/6) fine sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, nonplastic; few medium distinct reddish yellow (7.5YR 6/8) and pale yellow (2.5Y 7/4) masses of oxidized iron; many fine mica flakes; 1 percent rounded quartz gravel; very strongly acid; gradual wavy boundary.
C—50 to 65 inches; strong brown (7.5YR 5/8) loamy fine sand; massive; very friable, nonsticky, nonplastic; many fine mica flakes; 1 percent rounded quartz gravel; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches
Soil reaction: Extremely acid to strongly acid in the upper horizons, except in limed areas; extremely acid to slightly acid in the lower horizons
Rock fragments: 0 to 2 percent rounded quartz gravel in the A, E, BA, BE, Bt, and BC horizons; 0 to 25 percent in the C horizon
Mica flakes: Few to many in most pedons

A horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—3 to 6
Chroma—2 to 6
Texture—loamy fine sand, fine sandy loam, very fine sandy loam, or loam

Ap horizon:
Hue—7.5YR to 2.5Y
Value—3 to 6
Chroma—2 to 6
Texture—loamy fine sand, fine sandy loam, very fine sandy loam, or loam

E horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—3 to 8
Texture—loamy fine sand, fine sandy loam, very fine sandy loam, or loam

BA or BE horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—fine sandy loam, very fine sandy loam, or loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, loam, sandy clay loam, or clay loam; sandy loam or silt loam occurs in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red

BC horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, fine sandy loam, very fine sandy loam, loam, or sandy clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

C horizon:
Hue—7.5YR to 2.5Y
Value—4 to 7
Chroma—2 to 8
Texture (fine-earth fraction)—sand, loamy sand, loamy fine sand, or sandy loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades or gray

Suffolk Series

Physiographic province: Southern Coastal Plain
Landform: Marine terraces
Parent material: Loamy and sandy marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Bibb and Kinston soils, which are poorly drained and subject to flooding
- Emporia soils, which have iron depletions in the lower part of the subsoil
- Eunola and Slagle soils, which are moderately well drained
- Kempsville soils, which have a thicker subsoil than the Suffolk soils
- Myatt soils, which are poorly drained
- Nevarc soils, which are moderately well drained and have more clay in the subsoil than the Suffolk soils
- Remlik soils, which have thick, sandy surface layers
- Rumford soils, which have less clay in the subsoil than the Suffolk soils

Taxonomic Classification

Fine-loamy, siliceous, semiactive, thermic Typic Hapludults

Typical Pedon

Suffolk loamy sand in an area of Suffolk and Rumford soils, 2 to 6 percent slopes; in a

grassed area, 150 yards south of the football field at King William High School; elevation of 42 feet:

Ap—0 to 10 inches; brown (10YR 5/3) loamy sand; weak medium granular structure; friable, nonsticky, nonplastic; common fine roots; many fine tubular pores; strongly acid; gradual smooth boundary.

BA—10 to 14 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine roots; many fine tubular pores; strongly acid; gradual smooth boundary.

Bt1—14 to 22 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; common fine and medium roots; common fine and medium tubular pores; few faint clay films on all faces of peds; extremely acid; gradual smooth boundary.

Bt2—22 to 38 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; common fine tubular pores; few faint clay films on all faces of peds; very strongly acid; gradual smooth boundary.

BC—38 to 43 inches; strong brown (7.5YR 5/8) loamy sand; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine roots; common distinct clay bridges between sand grains; very strongly acid; gradual irregular boundary.

C—43 to 65 inches; yellow (10YR 7/8) sand; single grain; loose; few coarse distinct reddish yellow (7.5YR 6/8) masses of oxidized iron; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 50 inches
Soil reaction: Extremely acid to moderately acid, except in limed areas
Rock fragments: 0 to 5 percent in the A, E, BA, BE, Bt, and BC horizons; 0 to 30 percent in the C horizon

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—1 to 4
Texture—loamy sand, sandy loam, or fine sandy loam

Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—1 to 4
Texture—loamy sand, sandy loam, or fine sandy loam

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—3 to 6
Texture—loamy sand, sandy loam, or fine sandy loam

BA or BE horizon:
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, or loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6

Chroma—4 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam

BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

C horizon:
Hue—7.5YR to 2.5Y
Value—5 to 7
Chroma—2 to 8
Texture (fine-earth fraction)—sand, fine sand, loamy sand, or loamy fine sand
Redoximorphic features—iron masses in shades of brown, yellow, or red

Tarboro Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Sandy alluvial sediments
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Slope: 0 to 50 percent

Associated Soils

- Bojac soils, which are well drained and have a loamy subsoil
- Conetoe soils, which are well drained and have thick, sandy surface layers and a loamy subsoil
- Munden soils, which are moderately well drained and have a loamy subsoil
- Riverview soils, which are well drained and subject to flooding
- Seabrook soils, which are moderately well drained
- Wehadkee soils, which are poorly drained and subject to flooding

Taxonomic Classification

Mixed, thermic Typic Udipsamments

Typical Pedon

Tarboro sand, 0 to 6 percent slopes; in an area of pine woodland, 100 yards west of the junction of Highways VA-619 and VA-637; elevation of 40 feet:

Ap—0 to 9 inches; dark brown (10YR 3/3) sand; weak fine granular structure; very friable, nonsticky, nonplastic; many fine and medium roots; strongly acid; abrupt wavy boundary.
C1—9 to 16 inches; brownish yellow (10YR 6/6) sand; single grain; loose; common fine roots; common coatings of iron and organic materials on sand grains; strongly acid; diffuse smooth boundary.
C2—16 to 43 inches; yellow (10YR 7/6) and brownish yellow (10YR 6/6) sand; single grain; loose; common fine roots; common oxide coatings on sand grains; moderately acid; diffuse smooth boundary.
C3—43 to 80 inches; very pale brown (10YR 7/3) and brownish yellow (10YR 6/6) sand; single grain; loose; common fine roots; common uncoated white (10YR 8/2) sand grains; common dark oxide coatings on sand grains; moderately acid.

Range in Characteristics

Depth to base of sandy deposits: 80 inches or more
Soil reaction: Strongly acid to slightly acid, except in limed areas

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—sand or loamy sand

Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—sand or loamy sand

C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—2 to 8
Texture—sand or loamy sand

Tomotley Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Altavista soils, which are moderately well drained
- Bojac soils, which are well drained and have less clay in the subsoil than the Tomotley soils
- Munden soils, which are moderately well drained and have less clay in the subsoil than the Tomotley soils
- Roanoke soils, which have more clay in the subsoil than the Tomotley soils
- State and Wickham soils, which are well drained

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Typic Endoaquults

Typical Pedon

Tomotley fine sandy loam, 0 to 2 percent slopes; in a grass field, 0.5 mile north of the junction of Highways VA-600 and VA-621, about 250 yards west of Highway VA-621, behind a barn, 7 yards from the woods; elevation of 35 feet:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; few fine roots; common uncoated sand grains; few fine mica flakes; very strongly acid; clear smooth boundary.

Eg—10 to 17 inches; gray (10YR 6/1) fine sandy loam; weak medium granular structure; very friable, nonsticky, nonplastic; few fine roots; common medium

prominent yellowish brown (10YR 5/8) masses of oxidized iron; few fine mica flakes; very strongly acid; clear smooth boundary.

Btg1—17 to 25 inches; gray (10YR 6/1) loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; few faint clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; few fine mica flakes; very strongly acid; gradual smooth boundary.

Btg2—25 to 40 inches; gray (10YR 6/1) loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common distinct clay films on all faces of peds; many coarse prominent yellowish brown (10YR 5/8) masses of oxidized iron; few fine mica flakes; very strongly acid; gradual smooth boundary.

BCg—40 to 52 inches; gray (10YR 6/1) loam; weak medium subangular blocky structure; friable, slightly sticky, moderately plastic; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron; few fine mica flakes; very strongly acid; gradual smooth boundary.

Cg—52 to 65 inches; gray (10YR 6/1) sandy loam; massive; friable, nonsticky, nonplastic; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; few fine mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more

Soil reaction: Extremely acid to strongly acid in the A, Eg, and Btg horizons, except in limed areas; extremely acid to moderately acid in the BCg and Cg horizons

Rock fragments: 0 to 5 percent gravel throughout the profile

Mica flakes: Few or common in some pedons

Concretions: Fine black minerals occur in some pedons in the lower part of the Btg horizon and in the Cg horizon

A horizon (if it occurs):
Hue—neutral or 10YR to 5Y
Value—2 to 4
Chroma—0 to 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Ap horizon:
Hue—neutral or 10YR to 5Y
Value—2 to 4
Chroma—0 to 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Eg horizon:
Hue—neutral or 10YR or 2.5Y
Value—4 to 7
Chroma—0 to 2
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Btg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; subhorizons of silt loam or silty clay loam occur in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

BCg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 8
Chroma—0 to 2
Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, clay loam, or sandy clay
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Cg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 8
Chroma—0 to 2
Texture—sand to clay; pockets or strata of contrasting textures occur in some pedons
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of olive or gray

Udorthents

Physiographic province: Southern Coastal Plain
Landform: Marine and stream terraces
Parent material: Loamy and clayey alluvial and marine sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Unspecified
Slope: 0 to 6 percent

Associated Soils

- Kempsville, Nevarc, Remlik, Rumford, Slagle, and Suffolk soils, which have well defined subsoils

Typical Pedon

A typical pedon is not given due to the variable nature of the soil material. Most areas of Udorthents have been quarried for sand, gravel, or roadfill material. Some areas have been filled with a combination of soil and nonsoil material, and other areas have been excavated to a depth of 30 feet or more.

Range in Characteristics

Thickness of soil material: More than 40 inches
Soil reaction: Extremely acid to strongly acid
Rock fragments: 0 to 50 percent quartz gravel and ironstone fragments

Surface layer:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 or 3
Texture—loamy sand to clay

Lower layers:
Hue—2.5YR to 5Y
Value—3 to 8
Chroma—1 to 8
Texture—fine sandy loam to clay
Redoximorphic features—iron masses in shades of red, pink, brown, or yellow; iron depletions in shades of olive, gray, or white

Wehadkee Series

Physiographic province: Southern Coastal Plain
Landform: Flood plains
Parent material: Loamy alluvial sediments
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 2 percent

Associated Soils

- Altavista and Munden soils, which are moderately well drained and not subject to frequent flooding
- Riverview soils, which are well drained
- Seabrook soils, which are moderately well drained, are sandy throughout, and are not subject to flooding
- Tarboro soils, which are well drained, are sandy throughout, and are not subject to flooding

Taxonomic Classification

Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Wehadkee loam, 0 to 2 percent slopes, frequently flooded; at the edge of an area of mixed hardwoods, 200 yards southeast of Highway VA-615 at the Hanover County bridge, 100 yards north of the Pamunkey River; elevation of 36 feet:

Ap—0 to 10 inches; brown (10YR 4/3) and grayish brown (10YR 5/2) loam; weak medium granular structure; friable, slightly sticky, slightly plastic; common fine and medium roots; few fine mica flakes; strongly acid; clear smooth boundary.

Bg1—10 to 20 inches; light brownish gray (10YR 6/2) loam; weak fine subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine and few medium roots; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; few fine mica flakes; very strongly acid; gradual smooth boundary.

Bg2—20 to 32 inches; light brownish gray (10YR 6/2) loam; massive parting to weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine roots; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; common fine and medium mica flakes; very strongly acid; gradual smooth boundary.

Bg3—32 to 44 inches; gray (10YR 6/1) clay loam; massive parting to weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; many medium prominent reddish yellow (7.5YR 6/6) masses of oxidized iron; common fine and medium mica flakes; very strongly acid; gradual smooth boundary.

Cg—44 to 70 inches; light gray (10YR 7/1) clay loam; massive; firm, moderately sticky, moderately plastic; many medium prominent reddish yellow (7.5YR 6/6) masses of oxidized iron; common fine and medium mica flakes; very strongly acid.

Range in Characteristics

Solum thickness: 20 to 60 inches or more
Soil reaction: Very strongly acid to slightly acid
Mica flakes: Few to many in most pedons

A horizon (if it occurs):
Hue—neutral or 10YR or 2.5Y
Value—4 to 6
Chroma—0 to 4

Texture—loam or silt loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Ap horizon:
Hue—neutral or 10YR or 2.5Y
Value—4 to 6
Chroma—0 to 4
Texture—loam or silt loam
Redoximorphic features—iron masses in shades of brown, yellow, or red

Bg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 6
Chroma—0 to 2
Texture—loam, silt loam, sandy clay loam, clay loam, or silty clay loam
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

Cg horizon:
Hue—neutral or 10YR to 5Y
Value—4 to 7
Chroma—0 to 2
Texture—sandy loam, loam, or silt loam; strata of sand, loamy sand, sandy clay loam, clay loam, or silty clay loam occur in some pedons; sandy textures occur only below a depth of 40 inches
Redoximorphic features—iron masses in shades of brown, yellow, or red; iron depletions in shades of gray

The Wehadkee soils in King William County are considered taxadjuncts to the series because in most pedons they have a pH of less than 5.0 throughout the control section, which classifies them in the acid family. This difference, however, does not significantly affect the use and management of the soils.

Wickham Series

Physiographic province: Southern Coastal Plain
Landform: Stream terraces
Parent material: Loamy alluvial sediments
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Slope: 0 to 6 percent

Associated Soils

- Altavista soils, which are moderately well drained
- Bojac soils, which have less clay in the subsoil than the Wickham soils
- Munden soils, which are moderately well drained and have less clay in the subsoil than the Wickham soils
- Roanoke soils, which are poorly drained and have more clay in the subsoil than the Wickham soils
- State soils, which have strong brown colors in the subsoil
- Tomotley soils, which are poorly drained

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Wickham loamy fine sand, 2 to 6 percent slopes; in an area of mixed hardwoods and pines, 300 yards south of Highway VA-630, on the west boundary of Worsham Farm; elevation of 33 feet:

A—0 to 2 inches; dark grayish brown (10YR 4/2) loamy fine sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; common fine and medium tubular pores; few fine mica flakes; strongly acid; abrupt smooth boundary.

E—2 to 15 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine and medium granular structure; very friable, nonsticky, nonplastic; common fine and medium roots; common medium tubular pores; few fine mica flakes; strongly acid; clear smooth boundary.

BE—15 to 19 inches; strong brown (7.5YR 5/6) fine sandy loam; weak fine and medium subangular blocky structure; very friable, nonsticky, nonplastic; common fine and medium roots; common medium tubular pores; few faint clay films on all faces of peds; few fine mica flakes; strongly acid; clear smooth boundary.

Bt—19 to 37 inches; strong brown (7.5YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine roots; common medium tubular pores; few faint clay films on all faces of peds; common fine mica flakes; strongly acid; gradual smooth boundary.

C1—37 to 60 inches; strong brown (7.5YR 5/6) and yellowish red (5YR 5/8) loamy fine sand; massive; very friable, nonsticky, nonplastic; few fine roots; many fine mica flakes; strongly acid; gradual smooth boundary.

C2—60 to 70 inches; yellowish brown (10YR 5/8) fine sand; single grain; loose; many fine mica flakes; strongly acid.

Range in Characteristics

Solum thickness: 36 to 60 inches or more
Rock fragments: 0 to 5 percent rounded gravel in the A, E, BA, BE, Bt, and BC horizons; 0 to 15 percent in the C horizon
Soil reaction: Very strongly acid to moderately acid, except in limed areas
Mica flakes: None to many throughout the profile
Feldspars: None to common throughout the profile

A horizon:
Hue—5YR to 10YR
Value—4 or 5
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Ap horizon (if it occurs):
Hue—5YR to 10YR
Value—4 to 6
Chroma—2 to 8
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

E horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

BA or BE horizon:
Hue—2.5YR to 7.5YR
Value—4 to 6

Chroma—6 to 8
Texture—sandy loam, fine sandy loam, or loam

Bt horizon:
Hue—2.5YR to 7.5YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, loam, sandy clay loam, or clay loam

BC horizon (if it occurs):
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—3 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

C horizon:
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—3 to 8
Texture—sand to sandy clay loam

Formation of the Soils

In this section the factors and processes that have affected the formation and morphology of the soils in King William County are described.

Factors of Soil Formation

The characteristics of the soil at any given point depend upon the interaction of the five soil-forming factors—parent material, climate, plants and animals, relief, and time *(7)*.

Climate, plants, and animals are the active forces of soil formation. They act on the parent material accumulated through the deposition of sediments and slowly change it into soil. Although all the soil-forming factors affect the formation of every soil, the relative importance of each factor differs from place to place. In extreme cases one factor may dominate in the formation of a soil and fix most of its properties. In general, however, the combined action of the five factors affect the character of each soil.

Parent Material

Parent material is the unconsolidated mass from which a soil formed. It is largely responsible for the chemical and mineralogical composition of the soil and the rate at which soil-forming processes take place.

The parent materials in this survey area are alluvial and have been transported and deposited by marine and fluvial action. Episodes of deposition have occurred at different geologic times, and sediments have combined from different sources. These different episodes have resulted in three distinct areas of soils in the survey area. The largest and oldest area consists of uplands at the highest elevations in the county. The loamy Emporia, Kempsville, and Slagle soils and the clayey Eulonia soils formed in sediments in this area.

The second area consists of fluvial terraces along the rivers and streams. These terraces are at the lower elevations. The loamy State and Wickham soils and areas of the clayey Roanoke soils formed in the sediments of these terraces.

The third area consists of flood plains and marshes along the major rivers and streams. Bibb, Kinston, Riverview, and Wehadkee soils formed in sediments on flood plains. Bohicket, Lanexa, and Mattan soils are the dominant soils in marshes. These soils on flood plains and in marshes vary considerably in texture, have little soil development, and are continuously wet or flooded.

Climate

Climate affects the physical, chemical, and biological relationships in soils, principally through the influence of precipitation and temperature. Water dissolves minerals, supports biological activity, and transports mineral and organic residue through the solum. Temperature determines the type and rate of physical, chemical, and biological activities.

Precipitation causes the downward leaching of lime, free carbonates, and other

soluble minerals from upland soils, such as Emporia, Kempsville, and Kenansville soils. Water percolating through the soil also moves clay from the surface layer to the subsoil. Soils in the survey area typically have more clay in the subsoil than in the surface layer. Exceptions are soils that formed in recent alluvium, in sand, or on very steep slopes. Alluvial areas are recharged with sediments from the surrounding eroded uplands. Examples of soils in such areas are Bibb, Mattan, and Lanexa soils.

Climate also influences the formation of blocky structure in the subsoil of well developed soils. The development of peds (aggregates) in the subsoil is caused partly by changes in volume of the soil mass that are primarily the result of alternating periods of wetting and drying.

Plant and Animal Life

Micro-organisms, vegetation, animals, and humans are major factors in the formation of soils. Vegetation is generally responsible for the amount of organic matter and nutrients in the surface layer and the color of the surface layer. Earthworms, cicadas, and burrowing animals help to keep the soil open and porous. Micro-organisms decompose the vegetation and dead animal matter, thus releasing nutrients for plant food. Humans have changed the soil by mixing the upper layers.

Before human settlement, native vegetation, mainly oaks, hickories, and pines, was the major living organism affecting soil development in the survey area. Most hardwoods use a large amount of the available calcium and other bases and constantly recycle them through leaf fall and decay. This has prevented the soils in the survey area from becoming as leached as they would have been under a coniferous forest cover. Also, since the soils formed under forest vegetation, rapid decay of organic matter and constant recycling of nutrients have prevented the accumulation of organic matter in large quantities. In addition, the climate favors the rapid decay of plant materials, oxidation of organic matter, and leaching of nutrients.

Humans have influenced soil development by clearing forests, cultivating crops, introducing new plants, and changing natural drainage. The most important changes caused by humans result from mixing the upper layers of the soils to form a plow layer; cultivating steep slopes, which caused accelerated erosion; and applying lime and fertilizer, which changed soil fertility.

Relief

The underlying geologic formations, the geologic history of the general region, and the effects of dissection by rivers and streams largely determine the relief of an area. Relief, or topography, affects the formation of soils by influencing the quantity of infiltrating water, the rate of surface water runoff, the rate of drainage in the soil, the soil temperature, and the rate of geologic erosion. Relief can alter the effects of climate on the parent material to the extent that several different kinds of soils may form from the same kind of parent material. Relief also affects the amount of radiant energy absorbed by the soils, which in turn affects the type of native vegetation on the soils.

Relief in the survey area ranges from nearly level to very steep. The nearly level soils are common on upland flats, on flood plains of streams, on terraces, and in marshes. Most of the nearly level soils are often wet because of frequent flooding or a seasonal high water table, and the surface water runoff is usually slow. These soils typically have a subsoil or substratum that is gray or mottled gray, and the soils are somewhat poorly drained or poorly drained. Roanoke, Mattan, and Lanexa soils are examples of these soils.

The gently sloping to very steep soils generally are well drained or moderately well drained. On the gently sloping and sloping soils, geologic erosion is slight, surface water runoff is medium or rapid, and water infiltration is optimum. Translocation of

bases and clay has typically occurred downward through the soil. The soils in such areas are mature and have well defined horizons. Eulonia and Kempsville soils are examples of these soils. In the steeper areas, surface runoff is very rapid, water infiltration and translocation of clay and bases through the soil are reduced, and the erosion hazard is severe. Soils that formed in these areas have weakly expressed horizons.

In upland areas where natural stream dissection has not created drainage outlets, moderately well drained soils have formed. Relief has modified the effects of the other soil-forming factors in these areas. For example, Emporia and Slagle soils formed in similar parent materials. Emporia soils are higher on the landscape and are well drained, whereas Slagle soils are on lower landscapes and are moderately well drained.

Time

Time, as a factor of soil formation, generally is related to the degree of development or degree of horizon differentiation within the soil. A soil that has little or no horizon development is considered a young soil, and one that has strongly developed horizons is considered an old or mature soil.

The oldest soils in King William County are those that formed on well drained uplands at the higher elevations. These older soils, such as Emporia and Eulonia soils, have a strong degree of horizon differentiation. Conversely, Bibb and Kinston soils formed in recent alluvium and show little or no horizon development. They are commonly stratified and have an irregular distribution of organic matter in the profile.

Morphology of the Soils

The results of the soil-forming factors are shown by the different layers, or soil horizons, in a soil profile. The soil profile extends from the surface down to materials that are little altered by the soil-forming processes.

Most soils have four major horizons—the A, E, B, and C horizons. These major horizons may be further subdivided by the use of numbers and letters that indicate changes within a horizon. An example is a Bt horizon, which is a B horizon that has an accumulation of clay.

The A horizon is the surface layer and has the largest accumulation of organic matter. The A horizon is also the layer of maximum leaching and eluviation of clay and iron. If considerable leaching has taken place and organic matter has not darkened the material, this horizon is called an E horizon.

The B horizon underlies the A or E horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, and other compounds leached from the surface layer. In some soils the B horizon formed by alteration in place rather than by illuviation. This alteration can be caused by oxidation and reduction of iron or by the weathering of clay minerals. The B horizon commonly has blocky structure, and it generally is firmer and lighter in color than the A and E horizons but darker than the C horizon.

The C horizon is below the B horizon or, in some cases, below the A horizon. It consists of materials that are little altered by the soil-forming processes, but it can be modified by weathering.

Processes of Soil Horizon Differentiation

In King William County several processes are involved in the formation of soil horizons. Among these are the accumulation of organic matter, the leaching of soluble salts, the reduction and transfer of iron, the formation of soil structure, and the

formation and translocation of clay minerals. These processes are continually taking place, generally at the same time throughout the profile. Such processes have been going on for thousands of years.

The accumulation and incorporation of organic matter take place with the decomposition of plant residue. These additions darken the surface layer and help to form the A horizon. In many places, much of the surface layer has been eroded away or has been mixed with the materials from underlying layers through cultivation. Organic matter, once lost, normally takes a long time to replace. In King William County, the organic matter content of the surface layer ranges from low, in sandy soils such as Catpoint soils, to high, in marsh soils such as Lanexa soils. Most soils in the county have a low or medium amount of organic matter.

For soils to have distinct subsoil horizons, some of the lime and soluble salts must be leached before the translocation of clay minerals. Among the factors that affect this leaching are the kinds of salts originally present, the depth to which the soil solution percolates, and the texture of the soil profile.

Well drained and moderately well drained soils in the survey area have a yellowish brown to red subsoil. These colors are caused mainly by thin coatings of iron oxides on sand and silt grains, although in some soils the colors are inherited from the materials in which they formed. The structure is weak to moderate subangular blocky, and the subsoil contains more clay than the overlying surface horizons.

The reduction and transfer of iron, called gleying, takes place mainly in the wetter, more poorly drained soils. Moderately well drained soils, such as Slagle and Munden soils, have yellowish brown and strong brown redoximorphic features, which indicate the segregation of iron. In poorly drained soils, such as Myatt and Roanoke soils, the subsoil and underlying materials are grayish, which indicates reduction and transfer of iron by removal in solution.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse-grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Corrosion Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crusts, soil. Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable

according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct

characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Masses. See Redoximorphic features.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.
Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.
Plastic limit. The moisture content at which a soil changes from semisolid to plastic.
Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
Plowpan. A compacted layer formed in the soil directly below the plowed layer.
Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.
Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.
Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Redoximorphic concentrations. See Redoximorphic features.
Redoximorphic depletions. See Redoximorphic features.
Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features. The redoximorphic features are defined as follows:

1. *Redoximorphic concentrations.*—These are zones of apparent accumulation of iron-manganese oxides and include nodules and concretions, masses, and pore linings. *Nodules and concretions* are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure. *Masses* are noncemented concentrations of substances within the soil matrix. *Pore linings* are zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.

2. *Redoximorphic depletions.*—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out. They include iron depletions and clay depletions. *Iron depletions* are zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix. *Clay depletions* are zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. *Reduced matrix.*—This is a soil matrix that has low chroma in situ but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (K_{sat}). The amount of water that would move vertically through a unit area of saturated soil in unit time under unit hydraulic gradient. Terms describing saturated hydraulic conductivity are measured in

inches per hour or in micrometers per second (or µm/sec). To convert µm/sec to in/hr multiply µm/sec by 0.1417; to convert in/hr to µm/sec multiply by 7.0572. Terms are defined as follows:

Very low	0.0 to 0.001417 in/hr *(0.0 to 0.01 µm/sec)*
Low	0.001417 to 0.01417 in/hr *(0.01 to 0.1 µm/sec)*
Moderately low	0.01417 to 0.1417 in/hr *(0.1 to 1.0 µm/sec)*
Moderately high	0.1417 to 1.417 in/hr *(1.0 to 10 µm/sec)*
High	1.417 to 14.17 in/hr *(10 to 100 µm/sec)*
Very high	more than 14.17 in/hr *(more than 100 µm/sec)*

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Moderately sloping	6 to 10 percent
Strongly sloping	10 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 45 percent
Very steep	45 percent and higher

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification

system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1971-2000 at Walkerton, Virginia)

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have-- Maximum temp. higher than--	2 years in 10 will have-- Minimum temp. lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	47.4	26.3	36.8	73	-1	83	3.73	2.33	5.11	7	4.3
February-	51.6	28.3	40.0	77	4	115	3.14	1.70	4.50	6	4.1
March----	60.6	35.4	48.0	85	15	275	4.23	2.34	5.87	7	0.9
April----	71.2	43.6	57.4	91	25	522	3.02	1.83	4.13	6	0.0
May------	78.0	53.8	65.9	93	35	803	4.06	2.41	5.61	6	0.0
June-----	85.0	62.5	73.7	96	45	1,012	3.58	1.52	5.29	6	0.0
July-----	88.6	67.0	77.8	99	51	1,172	4.52	2.36	6.77	6	0.0
August---	87.1	65.4	76.2	98	49	1,121	3.53	1.68	5.19	5	0.0
September	81.3	58.5	69.9	95	39	898	3.96	1.60	5.80	5	0.0
October--	70.9	45.9	58.4	87	25	569	3.36	1.45	5.30	5	0.0
November-	61.1	37.0	49.0	81	16	293	3.18	1.75	4.51	6	0.2
December-	51.4	29.6	40.5	75	5	127	3.35	1.77	4.92	6	1.4
Yearly:											
Average	69.5	46.1	57.8	---	---	---	---	---	---	---	---
Extreme	102	-12	---	100	-4	---	---	---	---	---	---
Total--	---	---	---	---	---	6,990	43.65	37.32	49.02	71	11.1

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Walkerton, Virginia)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 5	Apr. 17	Apr. 26
2 years in 10 later than--	Mar. 31	Apr. 13	Apr. 22
5 years in 10 later than--	Mar. 21	Apr. 4	Apr. 15
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 29	Oct. 15	Oct. 8
2 years in 10 earlier than--	Nov. 4	Oct. 20	Oct. 12
5 years in 10 earlier than-	Nov. 16	Oct. 30	Oct. 21

Table 3.—Growing Season

(Recorded in the period 1971-2000 at Walkerton, Virginia)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	216	187	171
8 years in 10	224	195	177
5 years in 10	239	209	188
2 years in 10	253	223	200
1 year in 10	261	230	206

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1A	Altavista loamy sand, 0 to 2 percent slopes, rarely flooded	7,563	4.1
1B	Altavista fine sandy loam, 2 to 6 percent slopes	1,433	0.8
2A	Bama loam, 0 to 2 percent slopes	140	*
2B	Bama loam, 2 to 6 percent slopes	5,209	2.8
3A	Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded	8,805	4.8
4A	Bohicket silty clay loam, 0 to 1 percent slopes, very frequently flooded	3,446	1.9
5A	Bojac gravelly loamy sand, 0 to 2 percent slopes, rarely flooded	306	0.2
6A	Bojac fine sandy loam, 0 to 2 percent slopes	1,288	0.7
6B	Bojac fine sandy loam, 2 to 6 percent slopes	135	*
7A	Catpoint sand, 0 to 4 percent slopes	87	*
8A	Conetoe loamy fine sand, 0 to 4 percent slopes	1,346	0.7
9A	Daleville silt loam, 0 to 2 percent slopes	4,935	2.7
10A	Emporia fine sandy loam, 0 to 2 percent slopes	362	0.2
10B	Emporia fine sandy loam, 2 to 6 percent slopes	14,692	8.0
11A	Eulonia fine sandy loam, 0 to 2 percent slopes	2,492	1.4
11B	Eulonia fine sandy loam, 2 to 6 percent slopes	1,187	0.6
12A	Eunola sandy loam, 0 to 2 percent slopes	1,982	1.1
12B	Eunola sandy loam, 2 to 6 percent slopes	1,286	0.7
13A	Kempsville sandy loam, 0 to 2 percent slopes	357	0.2
13B	Kempsville sandy loam, 2 to 6 percent slopes	13,054	7.1
14A	Kenansville sand, 0 to 4 percent slopes	349	0.2
15A	Lanexa mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded	1,634	0.9
16A	Mattan mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded	6,237	3.4
17A	Munden loamy sand, 0 to 2 percent slopes	880	0.5
18A	Myatt loam, 0 to 2 percent slopes	278	0.2
19A	Nansemond loamy fine sand, 0 to 2 percent slopes	263	0.1
20A	Osier loamy fine sand, 0 to 2 percent slopes, rarely flooded	629	0.3
21A	Pactolus loamy sand, 0 to 2 percent slopes	696	0.4
22D	Remlik and Nevarc soils, 6 to 15 percent slopes	13,466	7.4
22F	Remlik and Nevarc soils, 15 to 60 percent slopes	23,168	12.7
23A	Riverview loamy fine sand, 0 to 2 percent slopes, frequently flooded	822	0.4
24A	Roanoke silt loam, 0 to 2 percent slopes	3,357	1.8
25A	Seabrook loamy fine sand, 0 to 2 percent slopes	2,885	1.6
26A	Slagle loam, 0 to 2 percent slopes	11,283	6.2
26B	Slagle loam, 2 to 6 percent slopes	10,406	5.7
27A	State loamy fine sand, 0 to 2 percent slopes	4,515	2.5
27B	State loamy fine sand, 2 to 6 percent slopes	1,189	0.7
28A	Suffolk and Rumford soils, 0 to 2 percent slopes	649	0.4
28B	Suffolk and Rumford soils, 2 to 6 percent slopes	5,540	3.0
29B	Tarboro sand, 0 to 6 percent slopes	2,009	1.1
29D	Tarboro sand, 6 to 15 percent slopes	2,226	1.2
29F	Tarboro sand, 15 to 50 percent slopes	1,782	1.0
30A	Tomotley fine sandy loam, 0 to 2 percent slopes	6,675	3.7
31B	Udorthents, gently sloping	551	0.3
32A	Wehadkee loam, 0 to 2 percent slopes, frequently flooded	2,408	1.3
33A	Wickham loamy fine sand, 0 to 2 percent slopes	593	0.3
33B	Wickham loamy fine sand, 2 to 6 percent slopes	433	0.2
W	Water	7,772	4.3
	Total	182,800	100.0

* Less than 0.1 percent.

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
1A:							
Altavista------	2w	B	160	4.5	11.5	50	64
1B:							
Altavista------	2e	B	160	4.5	11.5	50	64
2A:							
Bama-----------	1	R	120	4.0	10.0	40	56
2B:							
Bama-----------	2e	R	120	4.0	10.0	40	56
3A:							
Bibb-----------	5w	EE	---	---	4.0	---	---
Kinston--------	6w	OO	---	---	4.0	---	---
4A:							
Bohicket-------	8w	PP	---	---	---	---	---
5A:							
Bojac----------	2s	DD	77	3.1	8.0	23	50
6A:							
Bojac----------	1	DD	85	3.5	8.5	25	56
6B:							
Bojac----------	2e	DD	85	3.5	8.5	25	56
7A:							
Catpoint-------	3s	II	65	3.5	3.0	20	48
8A:							
Conetoe--------	2s	DD	85	3.5	9.0	25	56
9A:							
Daleville------	4w	OO	65	---	2.0	20	24
10A:							
Emporia--------	1	R	120	4.0	8.5	40	56
10B:							
Emporia--------	2e	R	120	4.0	8.5	40	56
11A:							
Eulonia--------	2w	HH	85	3.0	6.0	25	48
11B:							
Eulonia--------	2e	HH	85	3.0	6.0	25	48
12A:							
Eunola---------	2w	T	110	3.5	8.0	40	56

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
12B:							
Eunola	2e	T	110	3.5	8.0	40	56
13A:							
Kempsville	1	S	120	3.5	6.0	40	56
13B:							
Kempsville	2e	S	120	3.5	6.0	40	56
14A:							
Kenansville	3s	DD	85	3.5	9.0	25	56
15A:							
Lanexa	7w	PP	---	---	---	---	---
16A:							
Mattan	7w	PP	---	---	---	---	---
17A:							
Munden	2w	F	140	4.0	7.0	40	64
18A:							
Myatt	4w	OO	65	---	2.0	20	24
19A:							
Nansemond	2w	F	140	4.0	6.0	40	64
20A:							
Osier	4w	E	140	4.0	6.0	40	64
21A:							
Pactolus	3s	EE	85	---	2.0	25	48
22D:							
Remlik	4e	DD	68	2.8	5.5	20	45
Nevarc	4e	HH	68	2.4	5.0	20	38
22F:							
Remlik	7e	DD	---	---	---	---	---
Nevarc	7e	HH	---	---	---	---	---
23A:							
Riverview	2w	G	140	4.5	9.0	40	64
24A:							
Roanoke	4w	NN	65	---	3.0	20	24
25A:							
Seabrook	3s	EE	85	---	2.0	25	48
26A:							
Slagle	2w	K	130	4.5	8.0	40	64
26B:							
Slagle	2e	K	130	4.5	8.0	40	64

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Corn	Grass-legume hay	Pasture	Soybeans	Wheat
			Bu	Tons	AUM	Bu	Bu
27A:							
State----------	1	B	160	5.1	8.5	50	64
27B:							
State----------	2e	B	160	5.1	8.5	50	64
28A:							
Suffolk--------	1	T	110	3.5	7.0	40	56
Rumford--------	1	DD	85	3.5	7.5	25	56
28B:							
Suffolk--------	2e	T	110	3.5	7.0	40	56
Rumford--------	2e	DD	85	3.5	7.5	25	56
29B:							
Tarboro--------	3s	II	65	---	2.0	20	48
29D:							
Tarboro--------	4s	II	52	---	1.7	16	38
29F:							
Tarboro--------	6e	II	---	---	1.5	---	---
30A:							
Tomotley-------	4w	OO	65	---	2.5	20	24
31B. Udorthents							
32A:							
Wehadkee-------	6w	MM	---	---	8.5	---	---
33A:							
Wickham--------	1	B	160	5.5	9.5	50	64
33B:							
Wickham--------	2e	B	160	5.5	9.5	50	64
W. Water							

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Map unit name
1A	Altavista loamy sand, 0 to 2 percent slopes, rarely flooded
1B	Altavista fine sandy loam, 2 to 6 percent slopes
2A	Bama loam, 0 to 2 percent slopes
2B	Bama loam, 2 to 6 percent slopes
6A	Bojac fine sandy loam, 0 to 2 percent slopes
6B	Bojac fine sandy loam, 2 to 6 percent slopes
8A	Conetoe loamy fine sand, 0 to 4 percent slopes
9A	Daleville silt loam, 0 to 2 percent slopes (if drained)
10A	Emporia fine sandy loam, 0 to 2 percent slopes
10B	Emporia fine sandy loam, 2 to 6 percent slopes
11A	Eulonia fine sandy loam, 0 to 2 percent slopes
11B	Eulonia fine sandy loam, 2 to 6 percent slopes
12A	Eunola sandy loam, 0 to 2 percent slopes
12B	Eunola sandy loam, 2 to 6 percent slopes
13A	Kempsville sandy loam, 0 to 2 percent slopes
13B	Kempsville sandy loam, 2 to 6 percent slopes
17A	Munden loamy sand, 0 to 2 percent slopes
18A	Myatt loam, 0 to 2 percent slopes (if drained)
19A	Nansemond loamy fine sand, 0 to 2 percent slopes (if irrigated)
25A	Seabrook loamy fine sand, 0 to 2 percent slopes (if irrigated)
26A	Slagle loam, 0 to 2 percent slopes
26B	Slagle loam, 2 to 6 percent slopes
27A	State loamy fine sand, 0 to 2 percent slopes
27B	State loamy fine sand, 2 to 6 percent slopes
28A	Suffolk and Rumford soils, 0 to 2 percent slopes
28B	Suffolk and Rumford soils, 2 to 6 percent slopes
29B	Tarboro sand, 0 to 6 percent slopes (if irrigated)
30A	Tomotley fine sandy loam, 0 to 2 percent slopes (if drained)
33A	Wickham loamy fine sand, 0 to 2 percent slopes
33B	Wickham loamy fine sand, 2 to 6 percent slopes

Table 7.—Hydric Soils

Map symbol	Map unit name
3A	Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded
4A	Bohicket silty clay loam, 0 to 1 percent slopes, very frequently flooded
9A	Daleville silt loam, 0 to 2 percent slopes
15A	Lanexa mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded
16A	Mattan mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded
18A	Myatt loam, 0 to 2 percent slopes
20A	Osier loamy fine sand, 0 to 2 percent slopes, rarely flooded
24A	Roanoke silt loam, 0 to 2 percent slopes
30A	Tomotley fine sandy loam, 0 to 2 percent slopes
32A	Wehadkee loam, 0 to 2 percent slopes, frequently flooded

Table 8.—Agricultural Waste Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
1A:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.68	Depth to saturated zone	0.99
				Flooding	0.40
1B:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.68	Depth to saturated zone	0.99
2A:					
Bama	80	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
2B:					
Bama	80	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
3A:					
Bibb	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
Kinston	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Leaching	0.70	Too acid	0.91
4A:					
Bohicket	80	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
5A:					
Bojac	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Too acid	0.01	Flooding	0.40
				Too acid	0.03

Table 8.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
6A:					
Bojac	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Too acid	0.01	Too acid	0.03
6B:					
Bojac	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Too acid	0.01	Too acid	0.03
7A:					
Catpoint	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.70	Droughty	0.70
		Leaching	0.45	Too acid	0.03
8A:					
Conetoe	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Leaching	0.45	Too acid	0.42
		Too acid	0.11		
9A:					
Daleville	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Too acid	0.68	Too acid	1.00
10A:					
Emporia	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.89	Slow water movement	0.78
		Depth to saturated zone	0.09	Depth to saturated zone	0.09
		Too acid	0.01	Too acid	0.03
10B:					
Emporia	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.89	Slow water movement	0.78
		Depth to saturated zone	0.09	Depth to saturated zone	0.09
		Too acid	0.01	Too acid	0.03
11A:					
Eulonia	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.84	Too acid	1.00
		Too acid	0.68	Depth to saturated zone	0.84
		Slow water movement	0.30	Slow water movement	0.22

Table 8.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
11B:					
Eulonia	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.84	Too acid	1.00
		Too acid	0.68	Depth to saturated zone	0.84
		Slow water movement	0.30	Slow water movement	0.22
12A:					
Eunola	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.56	Depth to saturated zone	0.99
12B:					
Eunola	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.56	Depth to saturated zone	0.99
13A:					
Kempsville	80	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
13B:					
Kempsville	80	Somewhat limited		Very limited	
		Too acid	0.68	Too acid	1.00
14A:					
Kenansville	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.68	Too acid	0.91
		Leaching	0.45	Droughty	0.68
15A:					
Lanexa	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
16A:					
Mattan	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
17A:					
Munden	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.01	Too acid	0.03

Table 8.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
18A:					
Myatt	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.68	Too acid	1.00
		Runoff	0.40		
19A:					
Nansemond	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.01	Too acid	0.03
20A:					
Osier	80	Very limited		Very limited	
		Filtering capacity	1.00	Filtering capacity	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Leaching	0.90	Too acid	1.00
21A:					
Pactolus	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.97	Droughty	0.97
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
22D:					
Remlik	40	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Leaching	0.45	Too acid	0.91
		Slope	0.37	Slope	0.37
Nevarc	35	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.89	Depth to saturated zone	0.99
22F:					
Remlik	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
		Leaching	0.45	Too acid	0.91
Nevarc	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	1.00

Table 8.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
23A:					
Riverview	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Too acid	0.32	Too acid	0.91
24A:					
Roanoke	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Runoff	0.40	Too acid	0.91
25A:					
Seabrook	80	Very limited		Very limited	
		Filtering capacity	0.99	Filtering capacity	0.99
		Droughty	0.84	Too acid	0.91
		Depth to saturated zone	0.43	Droughty	0.84
26A:					
Slagle	80	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Slow water movement	0.89	Too acid	0.91
		Too acid	0.32	Slow water movement	0.78
26B:					
Slagle	80	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Slow water movement	0.89	Too acid	0.91
		Too acid	0.32	Slow water movement	0.78
27A:					
State	80	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
27B:					
State	80	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
28A:					
Suffolk	40	Somewhat limited		Somewhat limited	
		Too acid	0.32	Too acid	0.91
		Droughty	0.01	Droughty	0.01
Rumford	35	Somewhat limited		Somewhat limited	
		Too acid	0.02	Too acid	0.07
28B:					
Suffolk	40	Somewhat limited		Somewhat limited	
		Too acid	0.32	Too acid	0.91
		Droughty	0.01	Droughty	0.01
Rumford	35	Somewhat limited		Somewhat limited	
		Too acid	0.02	Too acid	0.07

Table 8.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
29B:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Filtering capacity	1.00
		Droughty	0.94	Droughty	0.94
		Leaching	0.45	Too acid	0.91
29D:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Filtering capacity	1.00
		Droughty	0.94	Droughty	0.94
		Leaching	0.45	Too acid	0.91
29F:					
Tarboro	80	Very limited		Very limited	
		Slope	1.00	Filtering capacity	1.00
		Filtering capacity	1.00	Slope	1.00
		Droughty	0.94	Droughty	0.94
30A:					
Tomotley	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.73	Too acid	1.00
		Leaching	0.70		
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Runoff	0.40	Too acid	0.85
33A:					
Wickham	80	Somewhat limited		Somewhat limited	
		Too acid	0.32	Too acid	0.91
33B:					
Wickham	80	Somewhat limited		Somewhat limited	
		Too acid	0.32	Too acid	0.91
W:					
Water	100	Not rated		Not rated	

Table 8.—Agricultural Waste Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
1A:					
Altavista	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Too acid	1.00
				Depth to saturated zone	0.99
1B:					
Altavista	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Too acid	1.00
		Too steep for surface application	0.08	Depth to saturated zone	0.99
2A:					
Bama	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
2B:					
Bama	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep for surface application	0.08	Too acid	1.00
3A:					
Bibb	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Filtering capacity	0.99	Depth to saturated zone	1.00
Kinston	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Too acid	0.91	Depth to saturated zone	1.00
4A:					
Bohicket	80	Very limited		Very limited	
		Slow water movement	1.00	Sodium content	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Ponding	1.00

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
5A:					
Bojac---------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
				Flooding	0.40
		Too acid	0.03	Too acid	0.03
6A:					
Bojac---------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
				Too acid	0.03
		Too acid	0.03		
6B:					
Bojac---------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
				Too acid	0.03
		Too steep for surface application	0.08		
		Too acid	0.03		
7A:					
Catpoint------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
				Too acid	0.03
		Droughty	0.70		0.03
		Too acid	0.03		
8A:					
Conetoe-------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
				Too acid	0.42
		Too acid	0.42		
9A:					
Daleville-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
				Too acid	1.00
		Too acid	1.00		
10A:					
Emporia-------------	80	Somewhat limited		Very limited	
		Slow water movement	0.78	Seepage	1.00
				Depth to saturated zone	0.09
		Depth to saturated zone	0.09		
				Too acid	0.03
		Too acid	0.03		
10B:					
Emporia-------------	80	Somewhat limited		Very limited	
		Slow water movement	0.78	Seepage	1.00
				Depth to saturated zone	0.09
		Depth to saturated zone	0.09		
				Too acid	0.03
		Too steep for surface application	0.08		

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11A:					
Eulonia	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.84	Too acid	1.00
		Slow water movement	0.22	Depth to saturated zone	0.84
11B:					
Eulonia	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.84	Too acid	1.00
		Slow water movement	0.22	Depth to saturated zone	0.84
12A:					
Eunola	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Too acid	1.00
				Depth to saturated zone	0.99
12B:					
Eunola	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Too acid	1.00
		Too steep for surface application	0.08	Depth to saturated zone	0.99
13A:					
Kempsville	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
13B:					
Kempsville	80	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep for surface application	0.08	Too acid	1.00
14A:					
Kenansville	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
		Too acid	0.91	Too acid	0.91
		Droughty	0.68		
15A:					
Lanexa	80	Very limited		Very limited	
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
16A:					
Mattan--------------	80	Very limited		Very limited	
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
17A:					
Munden--------------	80	Very limited		Very limited	
		Depth to saturated zone	0.99	Seepage	1.00
		Too acid	0.03	Depth to saturated zone	0.99
				Too acid	0.03
18A:					
Myatt---------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	1.00	Seepage	1.00
				Too acid	1.00
19A:					
Nansemond-----------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.03	Too acid	0.03
20A:					
Osier---------------	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	1.00	Too acid	1.00
21A:					
Pactolus------------	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
		Droughty	0.97	Depth to saturated zone	0.95
		Depth to saturated zone	0.95	Too acid	0.42
22D:					
Remlik--------------	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Filtering capacity	0.99	Too steep for surface application	0.94
		Too acid	0.91	Too acid	0.91

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
22D:					
Nevarc	35	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	1.00
		Too acid	1.00	Depth to saturated zone	0.99
22F:					
Remlik	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Filtering capacity	0.99	Too acid	0.91
Nevarc	35	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too acid	1.00
23A:					
Riverview	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Too acid	0.91	Seepage	1.00
				Too acid	0.91
24A:					
Roanoke	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.91	Too acid	0.91
25A:					
Seabrook	80	Very limited		Very limited	
		Filtering capacity	0.99	Seepage	1.00
		Too acid	0.91	Too acid	0.91
		Droughty	0.84	Depth to saturated zone	0.43
26A:					
Slagle	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Seepage	1.00
		Too acid	0.91	Depth to saturated zone	0.95
		Slow water movement	0.78	Too acid	0.91

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
26B:					
Slagle	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Seepage	1.00
		Too acid	0.91	Depth to saturated zone	0.95
		Slow water movement	0.78	Too acid	0.91
27A:					
State	80	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
				Too acid	0.42
27B:					
State	80	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.08	Too acid	0.42
28A:					
Suffolk	40	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Droughty	0.01	Too acid	0.91
Rumford	35	Somewhat limited		Very limited	
		Too acid	0.07	Seepage	1.00
				Too acid	0.07
28B:					
Suffolk	40	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Too steep for surface application	0.08	Too acid	0.91
		Droughty	0.01		
Rumford	35	Somewhat limited		Very limited	
		Too steep for surface application	0.08	Seepage	1.00
				Too acid	0.07
		Too acid	0.07		
29B:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Too acid	0.91
		Droughty	0.94		
		Too acid	0.91		
29D:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Too steep for surface application	0.94
		Too steep for surface application	1.00		
				Too acid	0.91
		Droughty	0.94		

Table 8.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29F:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Too acid	0.91
30A:					
Tomotley	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Too acid	1.00	Depth to saturated zone	1.00
				Too acid	1.00
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Too acid	0.85	Depth to saturated zone	1.00
33A:					
Wickham	80	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
				Too acid	0.91
33B:					
Wickham	80	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Too steep for surface application	0.08	Too acid	0.91
W:					
Water	100	Not rated		Not rated	

Table 8.—Agricultural Waste Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
1A:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Too acid	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Too acid	0.03		
1B:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Too acid	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Too acid	0.03	Too steep for surface application	0.08
2A:					
Bama	80	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.07		
2B:					
Bama	80	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.07	Too steep for surface application	0.08
3A:					
Bibb	45	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Filtering capacity	0.99
Kinston	40	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.91
4A:					
Bohicket	80	Very limited		Very limited	
		Ponding	1.00	Sodium content	1.00
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
5A:					
Bojac	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	0.32	Too acid	0.03
6A:					
Bojac	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	0.32	Too acid	0.03
6B:					
Bojac	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	0.32	Too steep for surface application	0.08
				Too acid	0.03
7A:					
Catpoint	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
				Too acid	0.03
8A:					
Conetoe	80	Somewhat limited		Very limited	
		Slow water movement	0.32	Filtering capacity	0.99
				Too acid	0.42
9A:					
Daleville	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Too acid	1.00
		Too acid	0.07	Slow water movement	0.94
10A:					
Emporia	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	0.60
		Depth to saturated zone	0.09	Depth to saturated zone	0.09
		Too acid	0.07	Too acid	0.03
10B:					
Emporia	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	0.60
		Depth to saturated zone	0.09	Depth to saturated zone	0.09
		Too acid	0.07	Too steep for surface application	0.08

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
11A:					
Eulonia	80	Very limited		Very limited	
		Slow water	1.00	Too acid	1.00
		movement		Depth to	0.84
		Depth to	1.00	saturated zone	
		saturated zone		Slow water	0.15
		Too acid	0.07	movement	
11B:					
Eulonia	80	Very limited		Very limited	
		Slow water	1.00	Too acid	1.00
		movement		Depth to	0.84
		Depth to	1.00	saturated zone	
		saturated zone		Slow water	0.15
		Too acid	0.07	movement	0.15
12A:					
Eunola	80	Very limited		Very limited	
		Depth to	1.00	Too acid	1.00
		saturated zone		Depth to	0.99
		Slow water	1.00	saturated zone	
		movement			
		Too acid	0.07		
12B:					
Eunola	80	Very limited		Very limited	
		Depth to	1.00	Too acid	1.00
		saturated zone		Depth to	0.99
		Slow water	1.00	saturated zone	
		movement		Too steep for	0.08
		Too acid	0.07	surface	
				application	
13A:					
Kempsville	80	Very limited		Very limited	
		Slow water	1.00	Too acid	1.00
		movement			
		Too acid	0.07		
13B:					
Kempsville	80	Very limited		Very limited	
		Slow water	1.00	Too acid	1.00
		movement		Too steep for	0.08
		Too acid	0.07	surface	
				application	
14A:					
Kenansville	80	Somewhat limited		Very limited	
		Slow water	0.62	Filtering	0.99
		movement		capacity	
		Too acid	0.07	Too acid	0.91
15A:					
Lanexa	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Flooding	1.00	Depth to	1.00
		Slow water	1.00	saturated zone	
		movement		Flooding	1.00

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
16A:					
Mattan--------------	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
17A:					
Munden--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Slow water movement	0.62	Too acid	0.03
		Too acid	0.07		
18A:					
Myatt---------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.07		
19A:					
Nansemond-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Slow water movement	0.32	Depth to saturated zone	0.99
				Too acid	0.03
20A:					
Osier---------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	1.00
		Too acid	0.55	Depth to saturated zone	1.00
				Too acid	1.00
21A:					
Pactolus------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Too acid	0.55	Depth to saturated zone	0.95
				Too acid	0.42
22D:					
Remlik--------------	40	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Filtering capacity	0.99
				Too steep for sprinkler irrigation	0.94

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
22D:					
Nevarc	35	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too acid	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
22F:					
Remlik	40	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Filtering capacity	0.99
Nevarc	35	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
		Depth to saturated zone	0.99	Too acid	1.00
23A:					
Riverview	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Too acid	0.91
		Slow water movement	1.00		
24A:					
Roanoke	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.94
		Too acid	0.07	Too acid	0.91
25A:					
Seabrook	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Filtering capacity	0.99
		Too acid	0.07	Too acid	0.91
				Depth to saturated zone	0.43
26A:					
Slagle	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.95
		Depth to saturated zone	1.00	Too acid	0.91
		Too acid	0.07	Slow water movement	0.60

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
26B:					
Slagle	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.95
		Depth to saturated zone	1.00	Too acid	0.91
		Too acid	0.07	Slow water movement	0.60
27A:					
State	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Too acid	0.42
		Slow water movement	1.00		
		Too acid	0.07		
27B:					
State	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Too acid	0.42
		Slow water movement	1.00	Too steep for surface application	0.08
		Too acid	0.07		
28A:					
Suffolk	40	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Too acid	0.03		
Rumford	35	Somewhat limited		Somewhat limited	
		Slow water movement	0.32	Too acid	0.07
28B:					
Suffolk	40	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Too acid	0.03	Too steep for surface application	0.08
Rumford	35	Somewhat limited		Somewhat limited	
		Slow water movement	0.32	Too steep for surface application	0.08
				Too acid	0.07
29B:					
Tarboro	80	Not limited		Very limited	
				Filtering capacity	1.00
				Too acid	0.91

Table 8.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
29D:					
Tarboro	80	Very limited		Very limited	
		Slope	1.00	Filtering capacity	1.00
				Too steep for surface application	1.00
				Too steep for sprinkler irrigation	0.94
29F:					
Tarboro	80	Very limited		Very limited	
		Slope	1.00	Filtering capacity	1.00
				Too steep for surface application	1.00
				Too steep for sprinkler irrigation	1.00
30A:					
Tomotley	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14		
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.85
33A:					
Wickham	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
33B:					
Wickham	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
				Too steep for surface application	0.08
W:					
Water	100	Not rated		Not rated	

Table 9.—Forestland Productivity

(Absence of an entry indicates that information was not available or that trees do not grow in areas of this soil)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1A:				
Altavista	loblolly pine	91	129	loblolly pine
	longleaf pine	87	114	
	white oak	77	57	
1B:				
Altavista	loblolly pine	91	129	loblolly pine
	longleaf pine	87	114	
	white oak	77	57	
2A:				
Bama	loblolly pine	90	129	loblolly pine, longleaf pine
	longleaf pine	75	86	
2B:				
Bama	loblolly pine	90	129	loblolly pine, longleaf pine
	longleaf pine	75	86	
3A:				
Bibb	loblolly pine	100	157	eastern cottonwood, loblolly pine, sweetgum, yellow-poplar
	sweetgum	90	100	
	water oak	90	86	
Kinston	cherrybark oak	95	57	American sycamore, cherrybark oak, eastern cottonwood, green ash, loblolly pine, sweetgum, yellow-poplar
	eastern cottonwood	100	---	
	loblolly pine	100	129	
	sweetgum	95	114	
	white oak	90	57	
4A.				
Bohicket				
5A:				
Bojac	loblolly pine	80	114	---
	southern red oak	70	57	
	sweetgum	80	86	
	Virginia pine	75	114	
6A:				
Bojac	loblolly pine	80	114	loblolly pine, sweetgum
	southern red oak	70	57	
	sweetgum	80	86	
	Virginia pine	75	114	
6B:				
Bojac	loblolly pine	80	114	loblolly pine, sweetgum
	southern red oak	70	57	
	sweetgum	80	86	
	Virginia pine	75	114	

Table 9.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
7A:				
Catpoint	loblolly pine	80	114	loblolly pine
	sweetgum	80	86	
	water oak	70	57	
8A:				
Conetoe	loblolly pine	85	114	loblolly pine, longleaf pine
9A:				
Daleville	loblolly pine	95	143	green ash, loblolly pine, Nuttall oak, Shumard oak, sweetgum
	sweetgum	90	100	
	water oak	85	86	
	willow oak	80	72	
10A:				
Emporia	loblolly pine	75	100	loblolly pine, sweetgum
	southern red oak	70	57	
10B:				
Emporia	loblolly pine	75	100	loblolly pine, sweetgum
	southern red oak	70	57	
11A:				
Eulonia	loblolly pine	90	129	American sycamore, loblolly pine, sweetgum, yellow-poplar
	longleaf pine	85	114	
	sweetgum	90	100	
	water oak	90	86	
11B:				
Eulonia	loblolly pine	90	129	American sycamore, loblolly pine, sweetgum, yellow-poplar
	longleaf pine	85	114	
	sweetgum	90	100	
	water oak	90	86	
12A:				
Eunola	loblolly pine	95	143	loblolly pine, sweetgum, yellow-poplar
	sweetgum	95	114	
	yellow-poplar	95	100	
12B:				
Eunola	loblolly pine	95	143	loblolly pine, sweetgum, yellow-poplar
	sweetgum	95	114	
	yellow-poplar	95	100	
13A:				
Kempsville	loblolly pine	82	114	loblolly pine
	southern red oak	74	57	
	sweetgum	80	86	
	Virginia pine	74	114	
	yellow-poplar	82	72	
13B:				
Kempsville	loblolly pine	82	114	loblolly pine
	southern red oak	74	57	
	sweetgum	80	86	
	Virginia pine	74	114	
	yellow-poplar	82	72	

Table 9.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
14A:				
Kenansville	loblolly pine	80	114	loblolly pine
	longleaf pine	65	72	
15A.				
Lanexa				
16A:				
Mattan	baldcypress	110	147	---
17A:				
Munden	loblolly pine	90	129	loblolly pine
	sweetgum	90	100	
	white oak	76	57	
18A:				
Myatt	loblolly pine	88	129	loblolly pine, sweetgum
	sweetgum	92	114	
	water oak	86	86	
19A:				
Nansemond	loblolly pine	86	129	black walnut, loblolly pine, sweetgum, yellow-poplar
	shortleaf pine	77	129	
	sweetgum	90	100	
	yellow-poplar	90	86	
20A:				
Osier	loblolly pine	87	129	loblolly pine
	longleaf pine	69	72	
21A:				
Pactolus	loblolly pine	86	129	loblolly pine
22D:				
Remlik	loblolly pine	80	114	loblolly pine
	southern red oak	74	57	
	Virginia pine	74	114	
	yellow-poplar	80	72	
Nevarc	loblolly pine	77	100	loblolly pine
	southern red oak	70	57	
	sweetgum	76	72	
	white oak	70	57	
	yellow-poplar	80	72	
22F:				
Remlik	loblolly pine	80	114	loblolly pine
	southern red oak	74	57	
	Virginia pine	74	114	
	yellow-poplar	80	72	
Nevarc	loblolly pine	77	100	loblolly pine
	southern red oak	70	57	
	sweetgum	76	72	
	white oak	70	57	
	yellow-poplar	80	72	

Table 9.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
23A:				
Riverview	loblolly pine	100	157	American sycamore, eastern cottonwood, loblolly pine, sweetgum, yellow-poplar
	sweetgum	100	143	
	yellow-poplar	110	129	
24A:				
Roanoke	sweetgum	90	100	sweetgum
	white oak	75	57	
	willow oak	76	57	
25A:				
Seabrook	loblolly pine	81	114	loblolly pine, longleaf pine
26A:				
Slagle	loblolly pine	86	129	loblolly pine, sweetgum, yellow-poplar
	southern red oak	76	57	
	sweetgum	86	100	
	water oak	76	72	
	yellow-poplar	90	86	
26B:				
Slagle	loblolly pine	86	129	loblolly pine, sweetgum, yellow-poplar
	southern red oak	76	57	
	sweetgum	86	100	
	water oak	76	72	
	yellow-poplar	90	86	
27A:				
State	loblolly pine	86	129	black walnut, loblolly pine, yellow-poplar
	southern red oak	85	72	
	Virginia pine	85	129	
	yellow-poplar	100	114	
27B:				
State	loblolly pine	86	129	black walnut, loblolly pine, yellow-poplar
	southern red oak	85	72	
	Virginia pine	85	129	
	yellow-poplar	100	114	
28A:				
Suffolk	loblolly pine	82	114	loblolly pine
	shortleaf pine	72	114	
	southern red oak	70	57	
Rumford	loblolly pine	80	114	loblolly pine
	southern red oak	65	43	
	Virginia pine	70	114	
28B:				
Suffolk	loblolly pine	82	114	loblolly pine
	shortleaf pine	72	114	
	southern red oak	70	57	

Table 9.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
28B:				
Rumford	loblolly pine	80	114	loblolly pine
	southern red oak	65	43	
	Virginia pine	70	114	
29B:				
Tarboro	loblolly pine	72	100	loblolly pine, longleaf pine
29D:				
Tarboro	loblolly pine	72	100	loblolly pine, longleaf pine
29F:				
Tarboro	loblolly pine	72	100	loblolly pine, longleaf pine
30A:				
Tomotley	loblolly pine	97	143	loblolly pine
	water oak	78	72	
	willow oak	86	86	
31B.				
Udorthents				
32A:				
Wehadkee	loblolly pine	93	143	green ash, loblolly pine, sweetgum, yellow-poplar
	sweetgum	94	114	
	water oak	91	86	
	willow oak	110	114	
	yellow-poplar	100	114	
33A:				
Wickham	loblolly pine	90	129	loblolly pine
	southern red oak	82	57	
	white oak	84	72	
	yellow-poplar	89	86	
33B:				
Wickham	loblolly pine	90	129	loblolly pine
	southern red oak	82	57	
	white oak	84	72	
	yellow-poplar	89	86	
W.				
Water				

Table 10.—Forestland Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Altavista-------	80	Slight		Well suited		Moderate	
						Low strength	0.50
1B:							
Altavista-------	80	Slight		Well suited		Moderate	
						Low strength	0.50
2A:							
Bama------------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
2B:							
Bama------------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
3A:							
Bibb------------	45	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
				Wetness	1.00		
Kinston---------	40	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
				Wetness	1.00		
4A:							
Bohicket--------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Low strength	1.00	Flooding	1.00	Wetness	0.50
		Wetness	1.00	Low strength	1.00		
5A:							
Bojac-----------	80	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
6A:							
Bojac-----------	80	Slight		Well suited		Moderate	
						Low strength	0.50
6B:							
Bojac-----------	80	Slight		Well suited		Moderate	
						Low strength	0.50
7A:							
Catpoint--------	80	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
8A:							
Conetoe---------	80	Slight		Well suited		Moderate	
						Low strength	0.50

Table 10.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
9A:							
Daleville-------	80	Moderate		Poorly suited		Severe	
		Low strength	0.50	Wetness	1.00	Low strength	1.00
				Low strength	0.50		
10A:							
Emporia---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
10B:							
Emporia---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
11A:							
Eulonia---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
11B:							
Eulonia---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
12A:							
Eunola----------	80	Slight		Well suited		Moderate	
						Low strength	0.50
12B:							
Eunola----------	80	Slight		Well suited		Moderate	
						Low strength	0.50
13A:							
Kempsville------	80	Slight		Well suited		Moderate	
						Low strength	0.50
13B:							
Kempsville------	80	Slight		Well suited		Moderate	
						Low strength	0.50
14A:							
Kenansville-----	80	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
15A:							
Lanexa----------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Low strength	1.00	Flooding	1.00	Wetness	0.50
		Wetness	1.00	Low strength	1.00		
16A:							
Mattan----------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Low strength	1.00	Flooding	1.00	Wetness	0.50
		Wetness	1.00	Low strength	1.00		
17A:							
Munden----------	80	Slight		Well suited		Moderate	
						Low strength	0.50

Table 10.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
18A:							
Myatt-----------	80	Moderate		Poorly suited		Severe	
		Low strength	0.50	Wetness	1.00	Low strength	1.00
		Sandiness	0.50	Sandiness	0.50		
				Low strength	0.50		
19A:							
Nansemond-------	80	Slight		Well suited		Moderate	
						Low strength	0.50
20A:							
Osier-----------	80	Slight		Poorly suited		Moderate	
				Wetness	1.00	Low strength	0.50
21A:							
Pactolus--------	80	Slight		Well suited		Moderate	
						Low strength	0.50
22D:							
Remlik----------	40	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
Nevarc----------	35	Moderate		Moderately suited		Moderate	
		Low strength	0.50	Slope	0.50	Low strength	0.50
22F:							
Remlik----------	40	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
Nevarc----------	35	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Low strength	0.50				
23A:							
Riverview-------	80	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
24A:							
Roanoke---------	80	Moderate		Poorly suited		Severe	
		Low strength	0.50	Wetness	1.00	Low strength	1.00
				Low strength	0.50		
25A:							
Seabrook--------	80	Slight		Well suited		Moderate	
						Low strength	0.50
26A:							
Slagle----------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
26B:							
Slagle----------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
27A:							
State-----------	80	Slight		Well suited		Moderate	
						Low strength	0.50

Table 10.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27B:							
State-----------	80	Slight		Well suited		Moderate	
						Low strength	0.50
28A:							
Suffolk---------	40	Slight		Well suited		Moderate	
						Low strength	0.50
Rumford---------	35	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
28B:							
Suffolk---------	40	Slight		Well suited		Moderate	
						Low strength	0.50
Rumford---------	35	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
29B:							
Tarboro---------	80	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
29D:							
Tarboro---------	80	Moderate		Moderately suited		Moderate	
		Sandiness	0.50	Slope	0.50	Low strength	0.50
				Sandiness	0.50		
29F:							
Tarboro---------	80	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
				Sandiness	0.50		
30A:							
Tomotley--------	80	Slight		Poorly suited		Moderate	
				Wetness	1.00	Low strength	0.50
31B:							
Udorthents------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee--------	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	1.00		
				Low strength	0.50		
33A:							
Wickham---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
33B:							
Wickham---------	80	Slight		Well suited		Moderate	
						Low strength	0.50
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 10.—Forestland Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Altavista	80	Slight		Slight		Well suited	
1B:							
Altavista	80	Slight		Slight		Well suited	
2A:							
Bama	80	Slight		Slight		Moderately suited	
						Low strength	0.50
2B:							
Bama	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
3A:							
Bibb	45	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
Kinston	40	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
4A:							
Bohicket	80	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Low strength	1.00
5A:							
Bojac	80	Slight		Slight		Moderately suited	
						Sandiness	0.50
6A:							
Bojac	80	Slight		Slight		Well suited	
6B:							
Bojac	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
7A:							
Catpoint	80	Slight		Slight		Moderately suited	
						Sandiness	0.50
8A:							
Conetoe	80	Slight		Slight		Well suited	
9A:							
Daleville	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
10A:							
Emporia	80	Slight		Slight		Well suited	

Table 10.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
10B:							
Emporia---------	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
11A:							
Eulonia---------	80	Slight		Slight		Well suited	
11B:							
Eulonia---------	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
12A:							
Eunola----------	80	Slight		Slight		Well suited	
12B:							
Eunola----------	80	Slight		Slight		Well suited	
13A:							
Kempsville------	80	Slight		Slight		Well suited	
13B:							
Kempsville------	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
14A:							
Kenansville-----	80	Slight		Slight		Moderately suited	
						Sandiness	0.50
15A:							
Lanexa----------	80	Very severe		Very severe		Poorly suited	
		Organic matter content high	1.00	Organic matter content high	1.00	Ponding	1.00
						Flooding	1.00
						Low strength	1.00
16A:							
Mattan----------	80	Very severe		Very severe		Poorly suited	
		Organic matter content high	1.00	Organic matter content high	1.00	Ponding	1.00
						Flooding	1.00
						Low strength	1.00
17A:							
Munden----------	80	Slight		Slight		Well suited	
18A:							
Myatt-----------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Sandiness	0.50
						Low strength	0.50
19A:							
Nansemond-------	80	Slight		Slight		Well suited	
20A:							
Osier-----------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
21A:							
Pactolus--------	80	Slight		Slight		Well suited	

Table 10.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
22D:							
Remlik----------	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Nevarc----------	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
22F:							
Remlik----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Nevarc----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
23A:							
Riverview-------	80	Slight		Slight		Poorly suited	
						Flooding	1.00
24A:							
Roanoke---------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
25A:							
Seabrook--------	80	Slight		Slight		Well suited	
26A:							
Slagle----------	80	Slight		Slight		Moderately suited	
						Low strength	0.50
26B:							
Slagle----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
27A:							
State-----------	80	Slight		Slight		Well suited	
27B:							
State-----------	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
28A:							
Suffolk---------	40	Slight		Slight		Well suited	
Rumford---------	35	Slight		Slight		Moderately suited	
						Sandiness	0.50
28B:							
Suffolk---------	40	Slight		Slight		Well suited	
Rumford---------	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Sandiness	0.50
29B:							
Tarboro---------	80	Slight		Slight		Moderately suited	
						Sandiness	0.50

Table 10.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
29D:							
Tarboro----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
29F:							
Tarboro----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
30A:							
Tomotley---------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
31B:							
Udorthents------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee---------	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
33A:							
Wickham----------	80	Slight		Slight		Well suited	
33B:							
Wickham----------	80	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 10.—Forestland Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
1A:							
Altavista-------	80	Well suited		Well suited		Well suited	
1B:							
Altavista-------	80	Well suited		Well suited		Well suited	
2A:							
Bama------------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
2B:							
Bama------------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
3A:							
Bibb------------	45	Well suited		Well suited		Well suited	
Kinston---------	40	Well suited		Well suited		Well suited	
4A:							
Bohicket--------	80	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Low strength	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
5A:							
Bojac-----------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Rock fragments	0.50		
6A:							
Bojac-----------	80	Well suited		Well suited		Well suited	
6B:							
Bojac-----------	80	Well suited		Well suited		Well suited	
7A:							
Catpoint--------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
8A:							
Conetoe---------	80	Well suited		Well suited		Well suited	
9A:							
Daleville-------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
10A:							
Emporia---------	80	Well suited		Well suited		Well suited	
10B:							
Emporia---------	80	Well suited		Well suited		Well suited	

Table 10.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
11A:							
Eulonia----------	80	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
11B:							
Eulonia----------	80	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
12A:							
Eunola-----------	80	Well suited		Well suited		Well suited	
12B:							
Eunola-----------	80	Well suited		Well suited		Well suited	
13A:							
Kempsville-------	80	Well suited		Well suited		Well suited	
13B:							
Kempsville-------	80	Well suited		Well suited		Well suited	
14A:							
Kenansville------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
15A:							
Lanexa-----------	80	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Low strength	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
16A:							
Mattan-----------	80	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Low strength	1.00
						Wetness	1.00
17A:							
Munden-----------	80	Well suited		Well suited		Well suited	
18A:							
Myatt------------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Low strength	0.50
						Sandiness	0.50
19A:							
Nansemond--------	80	Well suited		Well suited		Well suited	
20A:							
Osier------------	80	Well suited		Well suited		Well suited	
21A:							
Pactolus---------	80	Well suited		Well suited		Well suited	
22D:							
Remlik-----------	40	Well suited		Moderately suited		Well suited	
				Slope	0.50		

Table 10.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
22D:							
Nevarc----------	35	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
				Slope	0.50		
22F:							
Remlik----------	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
Nevarc----------	35	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75		
23A:							
Riverview-------	80	Well suited		Well suited		Well suited	
24A:							
Roanoke---------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
25A:							
Seabrook--------	80	Well suited		Well suited		Well suited	
26A:							
Slagle----------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
26B:							
Slagle----------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
27A:							
State-----------	80	Well suited		Well suited		Well suited	
27B:							
State-----------	80	Well suited		Well suited		Well suited	
28A:							
Suffolk---------	40	Well suited		Well suited		Well suited	
Rumford---------	35	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
28B:							
Suffolk---------	40	Well suited		Well suited		Well suited	
Rumford---------	35	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
29B:							
Tarboro---------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
29D:							
Tarboro---------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Slope	0.50	Sandiness	0.50
				Sandiness	0.50		

Table 10.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
29F:							
Tarboro----------	80	Moderately suited		Unsuited		Moderately suited	
		Sandiness	0.50	Slope	1.00	Slope	0.50
				Sandiness	0.50	Sandiness	0.50
30A:							
Tomotley---------	80	Well suited		Well suited		Well suited	
31B:							
Udorthents-------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee---------	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
33A:							
Wickham----------	80	Well suited		Well suited		Well suited	
33B:							
Wickham----------	80	Well suited		Well suited		Well suited	
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 10.—Forestland Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1A:					
Altavista-----------	80	Well suited		Well suited	
1B:					
Altavista-----------	80	Well suited		Well suited	
2A:					
Bama----------------	80	Well suited		Well suited	
2B:					
Bama----------------	80	Well suited		Well suited	
3A:					
Bibb----------------	45	Well suited		Well suited	
Kinston-------------	40	Well suited		Well suited	
4A:					
Bohicket------------	80	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
5A:					
Bojac---------------	80	Well suited		Well suited	
6A:					
Bojac---------------	80	Well suited		Well suited	
6B:					
Bojac---------------	80	Well suited		Well suited	
7A:					
Catpoint------------	80	Well suited		Well suited	
8A:					
Conetoe-------------	80	Well suited		Well suited	
9A:					
Daleville-----------	80	Well suited		Well suited	
10A:					
Emporia-------------	80	Well suited		Well suited	
10B:					
Emporia-------------	80	Well suited		Well suited	
11A:					
Eulonia-------------	80	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 10.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11B:					
Eulonia	80	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
12A:					
Eunola	80	Well suited		Well suited	
12B:					
Eunola	80	Well suited		Well suited	
13A:					
Kempsville	80	Well suited		Well suited	
13B:					
Kempsville	80	Well suited		Well suited	
14A:					
Kenansville	80	Well suited		Well suited	
15A:					
Lanexa	80	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
16A:					
Mattan	80	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
17A:					
Munden	80	Well suited		Well suited	
18A:					
Myatt	80	Well suited		Well suited	
19A:					
Nansemond	80	Well suited		Well suited	
20A:					
Osier	80	Well suited		Well suited	
21A:					
Pactolus	80	Well suited		Well suited	
22D:					
Remlik	40	Well suited		Well suited	
Nevarc	35	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
22F:					
Remlik	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Nevarc	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50		

Table 10.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
23A:					
Riverview	80	Well suited		Well suited	
24A:					
Roanoke	80	Well suited		Well suited	
25A:					
Seabrook	80	Well suited		Well suited	
26A:					
Slagle	80	Well suited		Well suited	
26B:					
Slagle	80	Well suited		Well suited	
27A:					
State	80	Well suited		Well suited	
27B:					
State	80	Well suited		Well suited	
28A:					
Suffolk	40	Well suited		Well suited	
Rumford	35	Well suited		Well suited	
28B:					
Suffolk	40	Well suited		Well suited	
Rumford	35	Well suited		Well suited	
29B:					
Tarboro	80	Well suited		Well suited	
29D:					
Tarboro	80	Well suited		Well suited	
29F:					
Tarboro	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
30A:					
Tomotley	80	Well suited		Well suited	
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Well suited		Well suited	
33A:					
Wickham	80	Well suited		Well suited	
33B:					
Wickham	80	Well suited		Well suited	
W:					
Water	100	Not rated		Not rated	

Table 10.—Forestland Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
1A:					
Altavista	80	High		Low	
		Texture/rock fragments	1.00		
1B:					
Altavista	80	Moderate		Low	
		Texture/rock fragments	0.50		
2A:					
Bama	80	Moderate		Low	
		Texture/rock fragments	0.50		
2B:					
Bama	80	Moderate		Low	
		Texture/rock fragments	0.50		
3A:					
Bibb	45	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
Kinston	40	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
4A:					
Bohicket	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
				Salinity	1.00
5A:					
Bojac	80	High		Low	
		Texture/rock fragments	1.00		
6A:					
Bojac	80	Moderate		Low	
		Texture/rock fragments	0.50		
6B:					
Bojac	80	Moderate		Low	
		Texture/rock fragments	0.50		

Table 10.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
7A:					
Catpoint------------	80	High		Low	
		Texture/rock fragments	1.00		
8A:					
Conetoe-------------	80	High		Low	
		Texture/rock fragments	1.00		
9A:					
Daleville-----------	80	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
10A:					
Emporia-------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
10B:					
Emporia-------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
11A:					
Eulonia-------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
11B:					
Eulonia-------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
12A:					
Eunola--------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
12B:					
Eunola--------------	80	Moderate		Low	
		Texture/rock fragments	0.50		
13A:					
Kempsville----------	80	Moderate		Low	
		Texture/rock fragments	0.50		
13B:					
Kempsville----------	80	Moderate		Low	
		Texture/rock fragments	0.50		
14A:					
Kenansville---------	80	High		Low	
		Texture/rock fragments	1.00		

Table 10.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
15A:					
Lanexa	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
				Salinity	0.50
				Soil reaction	0.50
16A:					
Mattan	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
17A:					
Munden	80	High		Low	
		Texture/rock fragments	1.00		
18A:					
Myatt	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
19A:					
Nansemond	80	High		Low	
		Texture/rock fragments	1.00		
20A:					
Osier	80	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
				Soil reaction	0.50
21A:					
Pactolus	80	High		Moderate	
		Texture/rock fragments	1.00	Soil reaction	0.50
22D:					
Remlik	40	High		Low	
		Texture/rock fragments	1.00		
Nevarc	35	Moderate		Moderate	
		Texture/rock fragments	0.50	Soil reaction	0.50
22F:					
Remlik	40	High		Low	
		Texture/rock fragments	1.00		
Nevarc	35	Moderate		Moderate	
		Texture/slope/ rock fragments	0.50	Soil reaction	0.50
23A:					
Riverview	80	High		Low	
		Texture/rock fragments	1.00		

Table 10.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
24A:					
Roanoke	80	Moderate		High	
		Texture/rock fragments	0.50	Wetness	1.00
25A:					
Seabrook	80	High		Low	
		Texture/surface depth/rock fragments	1.00		
26A:					
Slagle	80	Moderate		Low	
		Texture/rock fragments	0.50		
26B:					
Slagle	80	Moderate		Low	
		Texture/rock fragments	0.50		
27A:					
State	80	High		Low	
		Texture/rock fragments	1.00		
27B:					
State	80	Moderate		Low	
		Texture/rock fragments	0.50		
28A:					
Suffolk	40	High		Low	
		Texture/rock fragments	1.00		
Rumford	35	Moderate		Low	
		Texture/rock fragments	0.50		
28B:					
Suffolk	40	Moderate		Low	
		Texture/rock fragments	0.50		
Rumford	35	High		Low	
		Texture/rock fragments	1.00		
29B:					
Tarboro	80	High		Low	
		Texture/rock fragments	1.00		
29D:					
Tarboro	80	High		Low	
		Texture/rock fragments	1.00		

Table 10.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
29F:					
Tarboro	80	High		Low	
		Texture/rock fragments	1.00		
30A:					
Tomotley	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
33A:					
Wickham	80	High		Low	
		Texture/rock fragments	1.00		
33B:					
Wickham	80	High		Low	
		Texture/rock fragments	1.00		
W:					
Water	100	Not rated		Not rated	

Table 11.—Recreational Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
1A:							
Altavista	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.79	Too sandy	0.79
		Too sandy	0.79	Depth to saturated zone	0.19	Depth to saturated zone	0.39
		Depth to saturated zone	0.39				
1B:							
Altavista	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Too sandy	0.79
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39
2A:							
Bama	80	Not limited		Not limited		Not limited	
2B:							
Bama	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50
3A:							
Bibb	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Too sandy	0.81	Flooding	1.00
		Too sandy	0.81	Flooding	0.40	Too sandy	0.81
Kinston	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
4A:							
Bohicket	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Sodium content	1.00	Depth to saturated zone	1.00	Sodium content	1.00
		Salinity	1.00	Sodium content	1.00	Salinity	1.00
5A:							
Bojac	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.89	Gravel content	1.00
		Too sandy	0.89	Gravel content	0.68	Too sandy	0.89
		Gravel content	0.68				
6A:							
Bojac	80	Not limited		Not limited		Not limited	
6B:							
Bojac	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50

Table 11.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
7A:							
Catpoint--------	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
8A:							
Conetoe---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.96	Too sandy	0.96	Too sandy	0.96
9A:							
Daleville-------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
10A:							
Emporia---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.60	Slow water movement	0.60	Slow water movement	0.60
10B:							
Emporia---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.60	Slow water movement	0.60	Slow water movement	0.60
						Slope	0.50
11A:							
Eulonia---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.15	Slow water movement	0.15	Slow water movement	0.15
11B:							
Eulonia---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.15	Slow water movement	0.15	Slope	0.50
						Slow water movement	0.15
12A:							
Eunola----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
12B:							
Eunola----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
						Depth to saturated zone	0.39
13A:							
Kempsville------	80	Not limited		Not limited		Not limited	
13B:							
Kempsville------	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50
14A:							
Kenansville-----	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00

Table 11.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
15A:							
Lanexa----------	80	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 0.60	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00
16A:							
Mattan----------	80	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 0.60	Very limited Depth to saturated zone Flooding Ponding	 1.00 1.00 1.00
17A:							
Munden----------	80	Somewhat limited Too sandy Depth to saturated zone	 0.84 0.39	Somewhat limited Too sandy Depth to saturated zone	 0.84 0.19	Somewhat limited Too sandy Depth to saturated zone	 0.84 0.39
18A:							
Myatt-----------	80	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
19A:							
Nansemond-------	80	Somewhat limited Too sandy Depth to saturated zone	 0.94 0.39	Somewhat limited Too sandy Depth to saturated zone	 0.94 0.19	Somewhat limited Too sandy Depth to saturated zone	 0.94 0.39
20A:							
Osier-----------	80	Very limited Depth to saturated zone Flooding Too sandy	 1.00 1.00 0.96	Very limited Depth to saturated zone Too sandy	 1.00 0.96	Very limited Depth to saturated zone Too sandy	 1.00 0.96
21A:							
Pactolus--------	80	Somewhat limited Too sandy Depth to saturated zone	 0.81 0.07	Somewhat limited Too sandy Depth to saturated zone	 0.81 0.03	Somewhat limited Too sandy Depth to saturated zone	 0.81 0.07
22D:							
Remlik----------	40	Somewhat limited Too sandy Slope	 0.42 0.37	Somewhat limited Too sandy Slope	 0.42 0.37	Very limited Slope Too sandy	 1.00 0.42
Nevarc----------	35	Somewhat limited Slow water movement Depth to saturated zone Slope	 0.94 0.39 0.37	Somewhat limited Slow water movement Slope Depth to saturated zone	 0.94 0.37 0.19	Very limited Slope Slow water movement Depth to saturated zone	 1.00 0.94 0.39
22F:							
Remlik----------	40	Very limited Slope Too sandy	 1.00 0.42	Very limited Slope Too sandy	 1.00 0.42	Very limited Slope Too sandy	 1.00 0.42

Table 11.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
22F:							
Nevarc----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
23A:							
Riverview-------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.95	Flooding	1.00
		Too sandy	0.95	Flooding	0.40	Too sandy	0.95
24A:							
Roanoke---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
25A:							
Seabrook--------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.82	Too sandy	0.82	Too sandy	0.82
26A:							
Slagle----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07
26B:							
Slagle----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slope	0.50
						Depth to saturated zone	0.07
27A:							
State-----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Too sandy	0.79
27B:							
State-----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Too sandy	0.79
						Slope	0.50
28A:							
Suffolk---------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Too sandy	0.81
Rumford---------	35	Not limited		Not limited		Not limited	
28B:							
Suffolk---------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Too sandy	0.81
						Slope	0.50
Rumford---------	35	Not limited		Not limited		Somewhat limited	
						Slope	0.50

Table 11.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
29B:							
Tarboro---------	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
						Slope	0.12
29D:							
Tarboro---------	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Too sandy	1.00
29F:							
Tarboro---------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Too sandy	1.00	Slope	1.00
		Too sandy	1.00	Slope	1.00	Too sandy	1.00
30A:							
Tomotley--------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
31B:							
Udorthents------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee--------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
33A:							
Wickham---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.94	Too sandy	0.94	Too sandy	0.94
33B:							
Wickham---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.94	Too sandy	0.94	Too sandy	0.94
						Slope	0.50
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 11.—Recreational Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1A:							
Altavista-------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Depth to saturated zone	0.19
1B:							
Altavista-------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Depth to saturated zone	0.19
2A:							
Bama------------	80	Not limited		Not limited		Not limited	
2B:							
Bama------------	80	Not limited		Not limited		Not limited	
3A:							
Bibb------------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Too sandy	0.81	Too sandy	0.81	Depth to saturated zone	1.00
		Flooding	0.40	Flooding	0.40		
Kinston---------	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
4A:							
Bohicket--------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Flooding	0.60	Flooding	0.60	Salinity	1.00
5A:							
Bojac-----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.89	Too sandy	0.89	Gravel content	0.68
6A:							
Bojac-----------	80	Not limited		Not limited		Not limited	
6B:							
Bojac-----------	80	Not limited		Not limited		Not limited	
7A:							
Catpoint--------	80	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.92
						Too sandy	0.50
8A:							
Conetoe---------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.96	Too sandy	0.96	Droughty	0.05

Table 11.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
9A:							
Daleville-------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
10A:							
Emporia---------	80	Not limited		Not limited		Not limited	
10B:							
Emporia---------	80	Not limited		Not limited		Not limited	
11A:							
Eulonia---------	80	Not limited		Not limited		Not limited	
11B:							
Eulonia---------	80	Not limited		Not limited		Not limited	
12A:							
Eunola----------	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
12B:							
Eunola----------	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
13A:							
Kempsville------	80	Not limited		Not limited		Not limited	
13B:							
Kempsville------	80	Not limited		Not limited		Not limited	
14A:							
Kenansville-----	80	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.76
						Too sandy	0.50
15A:							
Lanexa----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
						Flooding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	0.60		
16A:							
Mattan----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
						Flooding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	0.60		
17A:							
Munden----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.84	Too sandy	0.84	Depth to saturated zone	0.19

Table 11.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
18A:							
Myatt	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
19A:							
Nansemond	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.94	Too sandy	0.94	Depth to saturated zone	0.19
20A:							
Osier	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too sandy	0.96	Too sandy	0.96	Droughty	0.57
21A:							
Pactolus	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Droughty	0.94
						Depth to saturated zone	0.03
22D:							
Remlik	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.42	Too sandy	0.42	Slope	0.37
						Droughty	0.03
Nevarc	35	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to saturated zone	0.19
22F:							
Remlik	40	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Slope	1.00
		Too sandy	0.42	Too sandy	0.42	Droughty	0.03
Nevarc	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Slope	1.00
						Depth to saturated zone	0.19
23A:							
Riverview	80	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.95	Too sandy	0.95	Flooding	1.00
		Flooding	0.40	Flooding	0.40		
24A:							
Roanoke	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
25A:							
Seabrook	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.82	Too sandy	0.82	Droughty	0.89
26A:							
Slagle	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03

Table 11.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
26B:							
Slagle	80	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03
27A:							
State	80	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.79	Too sandy	0.79		
27B:							
State	80	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.79	Too sandy	0.79		
28A:							
Suffolk	40	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.81	Too sandy	0.81		
Rumford	35	Not limited		Not limited		Not limited	
28B:							
Suffolk	40	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.81	Too sandy	0.81		
Rumford	35	Not limited		Not limited		Not limited	
29B:							
Tarboro	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	1.00
						Too sandy	0.50
29D:							
Tarboro	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	1.00
						Too sandy	0.50
						Slope	0.37
29F:							
Tarboro	80	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Slope	1.00
		Slope	1.00	Slope	0.56	Droughty	1.00
						Too sandy	0.50
30A:							
Tomotley	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
31B:							
Udorthents	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
33A:							
Wickham	80	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.94	Too sandy	0.94		

Table 11.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
33B:							
Wickham---------	80	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.94	Too sandy	0.94		
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 12.—Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1A:							
Altavista--------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
1B:							
Altavista--------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
2A:							
Bama-------------	80	Not limited		Not limited		Not limited	
2B:							
Bama-------------	80	Not limited		Not limited		Not limited	
3A:							
Bibb-------------	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Kinston----------	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
4A:							
Bohicket---------	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
5A:							
Bojac------------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.15		
6A:							
Bojac------------	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		
6B:							
Bojac------------	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		

Table 12.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
7A:							
Catpoint	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		
8A:							
Conetoe	80	Not limited		Not limited		Not limited	
9A:							
Daleville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
10A:							
Emporia	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.82		
				Shrink-swell	0.50		
10B:							
Emporia	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.82		
				Shrink-swell	0.50		
11A:							
Eulonia	80	Not limited		Very limited		Not limited	
				Depth to saturated zone	0.99		
11B:							
Eulonia	80	Not limited		Very limited		Not limited	
				Depth to saturated zone	0.99		
12A:							
Eunola	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
12B:							
Eunola	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
13A:							
Kempsville	80	Not limited		Not limited		Not limited	
13B:							
Kempsville	80	Not limited		Not limited		Not limited	
14A:							
Kenansville	80	Not limited		Not limited		Not limited	
15A:							
Lanexa	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 12.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
16A:							
Mattan	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
17A:							
Munden	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
18A:							
Myatt	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
19A:							
Nansemond	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
20A:							
Osier	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
21A:							
Pactolus	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
22D:							
Remlik	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
				Depth to saturated zone	0.16		
Nevarc	35	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.39	Shrink-swell	0.50	Shrink-swell	0.50
		Slope	0.37	Slope	0.37	Depth to saturated zone	0.39
22F:							
Remlik	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to saturated zone	0.16		
Nevarc	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39

Table 12.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
23A:							
Riverview----------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.61		
24A:							
Roanoke----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
25A:							
Seabrook----------	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.95		
26A:							
Slagle----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
26B:							
Slagle----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
27A:							
State----------	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		
27B:							
State----------	80	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.15		
28A:							
Suffolk----------	40	Not limited		Not limited		Not limited	
Rumford----------	35	Not limited		Not limited		Not limited	
28B:							
Suffolk----------	40	Not limited		Not limited		Not limited	
Rumford----------	35	Not limited		Not limited		Not limited	
29B:							
Tarboro----------	80	Not limited		Not limited		Not limited	
29D:							
Tarboro----------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
29F:							
Tarboro----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 12.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30A:							
Tomotley---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
31B:							
Udorthents-------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee---------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
33A:							
Wickham----------	80	Not limited		Not limited		Not limited	
33B:							
Wickham----------	80	Not limited		Not limited		Not limited	
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 12.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1A:							
Altavista--------	80	Somewhat limited Flooding Depth to saturated zone	 0.40 0.19	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00	Somewhat limited Depth to saturated zone	 0.19
1B:							
Altavista--------	80	Somewhat limited Depth to saturated zone	 0.19	Very limited Depth to saturated zone Cutbanks cave	 1.00 1.00	Somewhat limited Depth to saturated zone	 0.19
2A:							
Bama-------------	80	Not limited		Somewhat limited Cutbanks cave	 0.10	Not limited	
2B:							
Bama-------------	80	Not limited		Somewhat limited Cutbanks cave	 0.10	Not limited	
3A:							
Bibb-------------	45	Very limited Depth to saturated zone Flooding	 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Flooding	 1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	 1.00 1.00
Kinston----------	40	Very limited Depth to saturated zone Flooding	 1.00 1.00	Very limited Depth to saturated zone Cutbanks cave Flooding	 1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	 1.00 1.00
4A:							
Bohicket---------	80	Very limited Ponding Depth to saturated zone Flooding	 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	 1.00 1.00 1.00	Very limited Ponding Flooding Salinity	 1.00 1.00 1.00
5A:							
Bojac------------	80	Somewhat limited Flooding	 0.40	Very limited Cutbanks cave Depth to saturated zone	 1.00 0.15	Somewhat limited Gravel content	 0.68
6A:							
Bojac------------	80	Not limited		Very limited Cutbanks cave Depth to saturated zone	 1.00 0.15	Not limited	

Table 12.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
6B:							
Bojac------------	80	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
				Depth to saturated zone	0.15		
7A:							
Catpoint---------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.92
				Depth to saturated zone	0.15	Too sandy	0.50
8A:							
Conetoe----------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.05
9A:							
Daleville--------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
10A:							
Emporia----------	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.82		
				Cutbanks cave	0.10		
10B:							
Emporia----------	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.82		
				Cutbanks cave	0.10		
11A:							
Eulonia----------	80	Very limited		Very limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.99		
				Too clayey	0.12		
				Cutbanks cave	0.10		
11B:							
Eulonia----------	80	Very limited		Very limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.99		
				Too clayey	0.12		
				Cutbanks cave	0.10		
12A:							
Eunola-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Depth to saturated zone	0.19
				Cutbanks cave	0.10		
12B:							
Eunola-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Depth to saturated zone	0.19
				Cutbanks cave	0.10		

Table 12.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
13A:							
Kempsville-------	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
13B:							
Kempsville-------	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
14A:							
Kenansville------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.76
						Too sandy	0.50
15A:							
Lanexa-----------	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Flooding	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
16A:							
Mattan-----------	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Flooding	1.00	Flooding	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
17A:							
Munden-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Depth to saturated zone	0.19
				Cutbanks cave	1.00		
18A:							
Myatt------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Cutbanks cave	1.00		
19A:							
Nansemond--------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.19	Depth to saturated zone	1.00	Depth to saturated zone	0.19
				Cutbanks cave	1.00		
20A:							
Osier------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.40	Cutbanks cave	1.00	Droughty	0.57
21A:							
Pactolus---------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.03	Depth to saturated zone	1.00	Droughty	0.94
				Cutbanks cave	1.00	Depth to saturated zone	0.03

Table 12.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
22D:							
Remlik-----------	40	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Cutbanks cave	1.00	Slope	0.37
				Slope	0.37	Droughty	0.03
				Depth to saturated zone	0.16		
Nevarc-----------	35	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Slope	0.37
		Shrink-swell	0.50	Too clayey	0.50	Depth to saturated zone	0.19
		Slope	0.37	Slope	0.37		
22F:							
Remlik-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.03
				Depth to saturated zone	0.16		
Nevarc-----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Shrink-swell	0.50	Too clayey	0.50		
23A:							
Riverview--------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
		Low strength	1.00	Depth to saturated zone	0.61		
				Cutbanks cave	0.10		
24A:							
Roanoke----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	0.50	Cutbanks cave	0.10		
25A:							
Seabrook---------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.89
				Depth to saturated zone	0.95		
26A:							
Slagle-----------	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Cutbanks cave	0.10		
26B:							
Slagle-----------	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Cutbanks cave	0.10		

Table 12.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
27A:							
State------------	80	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
				Depth to saturated zone	0.15		
27B:							
State------------	80	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
				Depth to saturated zone	0.15		
28A:							
Suffolk----------	40	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
Rumford----------	35	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
28B:							
Suffolk----------	40	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
Rumford----------	35	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
29B:							
Tarboro----------	80	Not limited		Very limited		Very limited	
				Cutbanks cave	1.00	Droughty	1.00
						Too sandy	0.50
29D:							
Tarboro----------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Cutbanks cave	1.00	Droughty	1.00
				Slope	0.37	Too sandy	0.50
						Slope	0.37
29F:							
Tarboro----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	1.00
						Too sandy	0.50
30A:							
Tomotley---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Low strength	1.00	Cutbanks cave	0.10		
31B:							
Udorthents-------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth tp saturated zone	1.00
		Low strength	0.78	Cutbanks cave	0.10		

Table 12.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
33A:							
Wickham----------	80	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
33B:							
Wickham----------	80	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 13.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
1A:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Flooding	0.40
1B:					
Altavista	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
2A:					
Bama	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
2B:					
Bama	80	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
3A:					
Bibb	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Depth to saturated zone	1.00
Kinston	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
4A:					
Bohicket	80	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	1.00
		Ponding	1.00	Organic matter content	1.00

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
5A:					
Bojac	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to saturated zone	0.40	Flooding	0.40
		Flooding	0.40		
6A:					
Bojac	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to saturated zone	0.40		
6B:					
Bojac	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to saturated zone	0.40	Slope	0.32
7A:					
Catpoint	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00		
		Depth to saturated zone	0.40		
8A:					
Conetoe	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
9A:					
Daleville	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
10A:					
Emporia	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Slow water movement	1.00		
10B:					
Emporia	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Slow water movement	1.00	Slope	0.32

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
11A:					
Eulonia-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
11B:					
Eulonia-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
		Seepage, bottom layer	1.00		
12A:					
Eunola--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
12B:					
Eunola--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
				Slope	0.32
		Slow water movement	0.50		
13A:					
Kempsville----------	80	Somewhat limited		Very limited	
		Slow water movement	0.82	Seepage	1.00
13B:					
Kempsville----------	80	Somewhat limited		Very limited	
		Slow water movement	0.82	Seepage	1.00
				Slope	0.32
14A:					
Kenansville---------	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
15A:					
Lanexa--------------	80	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
16A:					
Mattan	80	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
17A:					
Munden	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
18A:					
Myatt	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.68	Seepage	0.50
19A:					
Nansemond	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Depth to saturated zone	1.00
20A:					
Osier	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00	Flooding	0.40
21A:					
Pactolus	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00		
22D:					
Remlik	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	1.00
		Depth to saturated zone	0.43		
Nevarc	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Slope	0.37		

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
22F:					
Remlik--------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
Nevarc--------------	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Slope	1.00		
23A:					
Riverview-----------	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.71
		Slow water movement	0.50	Seepage	0.50
24A:					
Roanoke-------------	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.99
25A:					
Seabrook------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Depth to saturated zone	1.00
		Filtering capacity	1.00		
26A:					
Slagle--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
26B:					
Slagle--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
27A:					
State---------------	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
		Depth to saturated zone	0.40		

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
27B:					
State	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
		Depth to saturated zone	0.40		
28A:					
Suffolk	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
Rumford	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
28B:					
Suffolk	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
Rumford	35	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
				Slope	0.32
29B:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Slope	0.08
29D:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37		
29F:					
Tarboro	80	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Seepage, bottom layer	1.00		
30A:					
Tomotley	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.68	Seepage	1.00

Table 13.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
31B:					
Udorthents----------	80	Not rated		Not rated	
32A:					
Wehadkee------------	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
33A:					
Wickham-------------	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
33B:					
Wickham-------------	80	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
				Slope	0.32
		Slow water movement	0.50		
W:					
Water---------------	100	Not rated		Not rated	

Table 13.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Altavista	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Too sandy	1.00	Flooding	0.40	Seepage	1.00
		Seepage, bottom layer	1.00			Depth to saturated zone	0.86
1B:							
Altavista	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
		Seepage, bottom layer	1.00			Depth to saturated zone	0.86
2A:							
Bama	80	Not limited		Not limited		Not limited	
2B:							
Bama	80	Not limited		Not limited		Not limited	
3A:							
Bibb	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00				
Kinston	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00				
4A:							
Bohicket	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Sodium content	1.00
5A:							
Bojac	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.68
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Flooding	0.40	Flooding	0.40		

Table 13.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6A:							
Bojac	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.50
		Seepage, bottom layer	1.00	Seepage	1.00		
6B:							
Bojac	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.50
		Seepage, bottom layer	1.00	Seepage	1.00		
7A:							
Catpoint	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00				
8A:							
Conetoe	80	Very limited		Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
9A:							
Daleville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
10A:							
Emporia	80	Somewhat limited		Not limited		Not limited	
		Depth to saturated zone	0.09				
10B:							
Emporia	80	Somewhat limited		Not limited		Not limited	
		Depth to saturated zone	0.09				
11A:							
Eulonia	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Seepage, bottom layer	1.00			Depth to saturated zone	0.44
						Seepage	0.21
11B:							
Eulonia	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Seepage, bottom layer	1.00			Depth to saturated zone	0.44
						Seepage	0.21

Table 13.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
12A:							
Eunola-----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage, bottom layer	1.00				
12B:							
Eunola-----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage, bottom layer	1.00				
13A:							
Kempsville-------	80	Not limited		Not limited		Not limited	
13B:							
Kempsville-------	80	Not limited		Not limited		Not limited	
14A:							
Kenansville------	80	Very limited		Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Too sandy	0.50
15A:							
Lanexa-----------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
16A:							
Mattan-----------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00		
17A:							
Munden-----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.21
18A:							
Myatt------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too sandy	1.00			Too sandy	1.00
19A:							
Nansemond--------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50

Table 13.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
20A:							
Osier------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00	Flooding	0.40	Seepage	1.00
21A:							
Pactolus---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Depth to saturated zone	0.68
22D:							
Remlik-----------	40	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.37
		Slope	0.37	Slope	0.37	Seepage	0.21
Nevarc-----------	35	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Depth to saturated zone	0.75	Too clayey	1.00
		Depth to saturated zone	0.99	Slope	0.37	Hard to compact	1.00
		Slope	0.37			Depth to saturated zone	0.86
22F:							
Remlik-----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.21
Nevarc-----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Depth to saturated zone	0.75	Too clayey	1.00
		Depth to saturated zone	0.99			Hard to compact	1.00
23A:							
Riverview--------	80	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
24A:							
Roanoke----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
25A:							
Seabrook---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
		Too sandy	0.50			Depth to saturated zone	0.09

Table 13.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
26A:							
Slagle-----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Too clayey	0.50			Too clayey	0.50
26B:							
Slagle-----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Too clayey	0.50			Too clayey	0.50
27A:							
State------------	80	Very limited		Very limited		Not limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00				
27B:							
State------------	80	Very limited		Very limited		Not limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00				
28A:							
Suffolk----------	40	Very limited		Very limited		Not limited	
		Seepage, bottom layer	1.00	Seepage	1.00		
Rumford----------	35	Very limited		Very limited		Very limited	
		Too sandy	1.00	Seepage	1.00	Too sandy	1.00
		Seepage, bottom layer	1.00			Seepage	1.00
28B:							
Suffolk----------	40	Very limited		Very limited		Not limited	
		Seepage, bottom layer	1.00	Seepage	1.00		
Rumford----------	35	Very limited		Very limited		Very limited	
		Too sandy	1.00	Seepage	1.00	Too sandy	1.00
		Seepage, bottom layer	1.00			Seepage	1.00
29B:							
Tarboro----------	80	Very limited		Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
						Seepage	1.00
		Too sandy	1.00				
29D:							
Tarboro----------	80	Very limited		Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
				Slope	0.37	Seepage	1.00
		Too sandy	1.00			Slope	0.37
		Slope	0.37				

Table 13.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29F:							
Tarboro----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
						Seepage	1.00
		Too sandy	1.00				
30A:							
Tomotley---------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
31B:							
Udorthents-------	80	Not rated		Not limited		Not rated	
32A:							
Wehadkee---------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
33A:							
Wickham----------	80	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
						Seepage	0.21
		Too sandy	0.50				
33B:							
Wickham----------	80	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
						Seepage	0.21
		Too sandy	0.50				
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 14.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1A:					
Altavista	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.38
1B:					
Altavista	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.38
2A:					
Bama	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
2B:					
Bama	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3A:					
Bibb	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.08
Kinston	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
4A:					
Bohicket	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
5A:					
Bojac	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.14
6A:					
Bojac	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.26
6B:					
Bojac	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.26

Table 14.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
7A:					
Catpoint------------	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.64
		Thickest layer	0.00	Thickest layer	0.64
8A:					
Conetoe-------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.05
		Thickest layer	0.00	Bottom layer	0.13
9A:					
Daleville-----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
10A:					
Emporia-------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
10B:					
Emporia-------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
11A:					
Eulonia-------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
11B:					
Eulonia-------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
12A:					
Eunola--------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
12B:					
Eunola--------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
13A:					
Kempsville----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
13B:					
Kempsville----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
14A:					
Kenansville---------	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.11

Table 14.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
15A:					
Lanexa--------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
16A:					
Mattan--------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
17A:					
Munden--------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.36
18A:					
Myatt---------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.74
19A:					
Nansemond-----------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.10
20A:					
Osier---------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.72
21A:					
Pactolus------------	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.38
22D:					
Remlik--------------	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.08
Nevarc--------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
22F:					
Remlik--------------	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.08
Nevarc--------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
23A:					
Riverview-----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
24A:					
Roanoke	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
25A:					
Seabrook	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.51
26A:					
Slagle	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
26B:					
Slagle	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
27A:					
State	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
27B:					
State	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
28A:					
Suffolk	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.36
Rumford	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.00	Bottom layer	0.64
28B:					
Suffolk	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.36
Rumford	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.00	Bottom layer	0.64
29B:					
Tarboro	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.34
		Thickest layer	0.00	Bottom layer	0.69
29D:					
Tarboro	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.34
		Thickest layer	0.00	Bottom layer	0.69

Table 14.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
29F:					
Tarboro	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.34
		Thickest layer	0.00	Bottom layer	0.69
30A:					
Tomotley	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
31B:					
Udorthents	80	Not rated		Not rated	
32A:					
Wehadkee	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
33A:					
Wickham	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
33B:					
Wickham	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
W:					
Water	100	Not rated		Not rated	

Table 14.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1A:							
Altavista--------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.02			Too acid	0.76
		Too acid	0.16				
1B:							
Altavista--------	80	Fair		Fair		Fair	
		Organic matter content low	0.02	Wetness depth	0.53	Wetness depth	0.53
		Too acid	0.16			Too acid	0.76
2A:							
Bama-------------	80	Fair		Good		Fair	
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.50				
2B:							
Bama-------------	80	Fair		Good		Fair	
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.50				
3A:							
Bibb-------------	45	Poor		Poor		Poor	
		Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54			Too acid	0.98
Kinston----------	40	Fair		Poor		Poor	
		Too acid	0.16	Wetness depth	0.00	Wetness depth	0.00
						Too acid	0.68
4A:							
Bohicket---------	80	Poor		Poor		Poor	
		Sodium content	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too clayey	0.08	Low strength	0.00	Sodium content	0.00
		Salinity	0.50	Shrink-swell	0.12	Salinity	0.00
5A:							
Bojac------------	80	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.32
		Too acid	0.97				
6A:							
Bojac------------	80	Fair		Good		Good	
		Organic matter content low	0.12				
		Too acid	0.99				

Table 14.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
6B:							
Bojac	80	Fair		Good		Good	
		Organic matter content low	0.12				
		Too acid	0.99				
7A:							
Catpoint	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Organic matter content low	0.02				
8A:							
Conetoe	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Too acid	0.84				
9A:							
Daleville	80	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
				Low strength	0.00	Too acid	0.68
		Too acid	0.50	Shrink-swell	0.87		
		Water erosion	0.90				
10A:							
Emporia	80	Fair		Fair		Good	
		Organic matter content low	0.12	Shrink-swell	0.99		
		Too acid	0.16				
10B:							
Emporia	80	Fair		Fair		Good	
		Organic matter content low	0.12	Shrink-swell	0.99		
		Too acid	0.16				
11A:							
Eulonia	80	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.91	Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
						Wetness depth	0.91
		Too acid	0.16				
11B:							
Eulonia	80	Poor		Fair		Poor	
		Too clayey	0.00	Wetness depth	0.91	Too clayey	0.00
		Organic matter content low	0.02			Too acid	0.68
						Wetness depth	0.91
		Too acid	0.16				
12A:							
Eunola	80	Fair		Fair		Fair	
		Too acid	0.20	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.50			Too acid	0.76

Table 14.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
12B:							
Eunola-----------	80	Fair		Fair		Fair	
		Too acid	0.20	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.50			Too acid	0.76
13A:							
Kempsville-------	80	Fair		Good		Fair	
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16				
13B:							
Kempsville-------	80	Fair		Good		Fair	
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16				
14A:							
Kenansville------	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Too acid	0.98
		Organic matter content low	0.02				
15A:							
Lanexa-----------	80	Poor		Poor		Poor	
		Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.01	Low strength	0.00	Too acid	0.24
		Too clayey	0.50			Too clayey	0.50
16A:							
Mattan-----------	80	Fair		Poor		Poor	
		Too acid	0.54	Wetness depth	0.00	Wetness depth	0.00
						Organic matter content high	0.00
						Too acid	0.98
17A:							
Munden-----------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.02			Too acid	0.68
		Too acid	0.16				
18A:							
Myatt------------	80	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
						Too acid	0.98
		Too acid	0.16				0.98
19A:							
Nansemond--------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.02			Too acid	0.98
		Too acid	0.54				

Table 14.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
20A:							
Osier------------	80	Poor		Poor		Poor	
		Too sandy	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.12			Too sandy	0.00
		Droughty	0.13			Too acid	0.24
21A:							
Pactolus---------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.76	Too sandy	0.01
		Too sandy	0.01			Too acid	0.24
		Organic matter content low	0.02			Wetness depth	0.76
22D:							
Remlik-----------	40	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.30
		Organic matter content low	0.02			Slope	0.63
		Too sandy	0.30			Too acid	0.98
Nevarc-----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.01	Wetness depth	0.53	Wetness depth	0.53
		Organic matter content low	0.12	Shrink-swell	0.99	Slope	0.63
22F:							
Remlik-----------	40	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.02			Too sandy	0.30
		Too sandy	0.30			Too acid	0.98
Nevarc-----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Too acid	0.01	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.53	Wetness depth	0.53
23A:							
Riverview--------	80	Poor		Poor		Fair	
		Wind erosion	0.00	Low strength	0.00	Too acid	0.98
		Too acid	0.54				
		Organic matter content low	0.88				
24A:							
Roanoke----------	80	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.16	Shrink-swell	0.89	Too acid	0.68
25A:							
Seabrook---------	80	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.22
		Organic matter content low	0.12			Too acid	0.68
		Droughty	0.16				

Table 14.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
26A:							
Slagle-----------	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.76
		Too acid	0.54	Wetness depth	0.76	Too acid	0.98
26B:							
Slagle-----------	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.76
		Too acid	0.54	Wetness depth	0.76	Too acid	0.98
27A:							
State------------	80	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.98
		Organic matter content low	0.12				
		Too acid	0.54				
27B:							
State------------	80	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.98
		Organic matter content low	0.12				
		Too acid	0.54				
28A:							
Suffolk----------	40	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.76
		Organic matter content low	0.12				
		Too acid	0.50				
Rumford----------	35	Fair		Good		Good	
		Organic matter content low	0.02				
		Too acid	0.54				
28B:							
Suffolk----------	40	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.76
		Organic matter content low	0.12				
		Too acid	0.50				
Rumford----------	35	Fair		Good		Good	
		Organic matter content low	0.02				
		Too acid	0.54				
29B:							
Tarboro----------	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Organic matter content low	0.02				

Table 14.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
29D:							
Tarboro	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Slope	0.63
		Organic matter content low	0.02				
29F:							
Tarboro	80	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Organic matter content low	0.02				
30A:							
Tomotley	80	Fair		Poor		Poor	
		Too acid	0.12	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.88	Low strength	0.00	Too acid	0.59
31B:							
Udorthents	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee	80	Fair		Poor		Poor	
		Too acid	0.16	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.22	Too acid	0.68
33A:							
Wickham	80	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.98
		Organic matter content low	0.02				
		Too acid	0.54				
33B:							
Wickham	80	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.98
		Organic matter content low	0.02				
		Too acid	0.54				
W:							
Water	100	Not rated		Not rated		Not rated	

Table 15.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1A:							
Altavista-------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	1.00
				Seepage	0.38	Depth to saturated zone	0.01
1B:							
Altavista-------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	1.00
				Seepage	0.38	Depth to saturated zone	0.01
2A:							
Bama------------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.21	Depth to water	1.00
2B:							
Bama------------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.21	Depth to water	1.00
3A:							
Bibb------------	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.08		
Kinston---------	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.10		
4A:							
Bohicket--------	80	Not limited		Very limited		Very limited	
				Organic matter content	1.00	Slow refill	1.00
				Ponding	1.00	Salinity and saturated zone	0.78
				Depth to saturated zone	1.00	Cutbanks cave	0.10
5A:							
Bojac-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.14	Depth to water	1.00
6A:							
Bojac-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.26	Depth to water	1.00
6B:							
Bojac-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.26	Depth to water	1.00
7A:							
Catpoint--------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00

Table 15.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
8A:							
Conetoe---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.13	Depth to water	1.00
9A:							
Daleville-------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
						Cutbanks cave	0.10
				Piping	0.06		
10A:							
Emporia---------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.10	Depth to water	1.00
				Depth to saturated zone	0.09		
10B:							
Emporia---------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.10	Depth to water	1.00
				Depth to saturated zone	0.09		
11A:							
Eulonia---------	80	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.84	Cutbanks cave	0.10
						Depth to saturated zone	0.07
				Seepage	0.04		
				Piping	0.01		
11B:							
Eulonia---------	80	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.84	Cutbanks cave	0.10
						Depth to saturated zone	0.07
				Seepage	0.04		
				Piping	0.01		
12A:							
Eunola----------	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
				Seepage	0.03		
12B:							
Eunola----------	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	0.10
						Depth to saturated zone	0.01
				Seepage	0.03		
13A:							
Kempsville------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.63	Depth to water	1.00
13B:							
Kempsville------	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.63	Depth to water	1.00
14A:							
Kenansville-----	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.11	Depth to water	1.00

Table 15.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
15A:							
Lanexa----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Organic matter content	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Ponding	1.00	Salinity and saturated zone	0.06
				Depth to saturated zone	1.00		
16A:							
Mattan----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.93		
17A:							
Munden----------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	1.00
				Seepage	0.36	Depth to saturated zone	0.01
18A:							
Myatt-----------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.57	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.30
				Seepage	0.74		
19A:							
Nansemond-------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	1.00
						Depth to saturated zone	0.01
				Seepage	0.10		
20A:							
Osier-----------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.72		
21A:							
Pactolus--------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.95	Cutbanks cave	1.00
						Depth to saturated zone	0.02
				Seepage	0.38		
22D:							
Remlik----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
		Slope	0.01				
Nevarc----------	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.01	Depth to saturated zone	0.99	Depth to water	1.00
		Slope	0.01				
				Hard to pack	0.59		
22F:							
Remlik----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
		Slope	0.82				

Table 15.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
22F:							
Nevarc----------	35	Somewhat limited		Very limited		Very limited	
		Slope	0.82	Depth to saturated zone	0.99	Depth to water	1.00
		Seepage	0.01	Hard to pack	0.59		
23A:							
Riverview-------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Piping	0.66	Depth to saturated zone	0.81
						Slow refill	0.30
						Cutbanks cave	0.10
24A:							
Roanoke---------	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
25A:							
Seabrook--------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.51	Cutbanks cave	1.00
				Depth to saturated zone	0.43	Depth to saturated zone	0.25
26A:							
Slagle----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.95	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.08	Depth to saturated zone	0.02
26B:							
Slagle----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.95	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.08	Depth to saturated zone	0.02
27A:							
State-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Depth to water	1.00
27B:							
State-----------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Depth to water	1.00
28A:							
Suffolk---------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
Rumford---------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00
28B:							
Suffolk---------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
Rumford---------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00

Table 15.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
29B:							
Tarboro---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.69	Depth to water	1.00
29D:							
Tarboro---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.69	Depth to water	1.00
		Slope	0.01				
29F:							
Tarboro---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.69	Depth to water	1.00
		Slope	0.64				
30A:							
Tomotley--------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.71		
				Seepage	0.03		
31B:							
Udorthents------	80	Not rated		Not rated		Not rated	
32A:							
Wehadkee--------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.59		
33A:							
Wickham---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Depth to water	1.00
33B:							
Wickham---------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.06	Depth to water	1.00
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 16.—Engineering Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
1A:										
Altavista-------	0-16	Loamy sand, sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4	95-100	90-100	45-95	15-75	17-29	2-6
	16-40	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	CL, SC, SC-SM	A-6, A-7	95-100	90-100	65-100	36-80	27-44	12-25
	40-65	Sand, loamy sand, fine sand, sandy loam, fine sandy loam	SC-SM, SC, SM, CL	A-1-b, A-3, A-2-4, A-4	95-100	80-100	40-85	5-55	0-31	NP-13
1B:										
Altavista-------	0-16	Loamy sand, sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4	95-100	90-100	45-95	15-75	17-29	2-6
	16-40	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	CL, SC, SC-SM	A-7, A-6	95-100	90-100	65-100	36-80	27-44	12-25
	40-65	Sand, fine sand, loamy sand, sandy loam, fine sandy loam	CL, SC, SC-SM, SM	A-3, A-2-4, A-4, A-1-b	95-100	80-100	40-85	5-55	0-31	NP-13
2A:										
Bama------------	0-13	Loam, fine sandy loam, sandy loam	ML, CL-ML, SC, SC-SM, SM	A-4	95-100	80-100	50-95	25-75	19-34	3-15
	13-26	Loam, sandy clay loam, fine sandy loam, sandy loam	CL, SC, SC-SM	A-6	95-100	80-100	50-95	25-75	27-42	12-22
	26-70	Sandy clay loam, clay loam, loam	CL, SC, SC-SM	A-4, A-6	95-100	80-100	65-100	30-80	24-44	9-25

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
2B:										
Bama------------	0-13	Loam, fine sandy loam, sandy loam	CL-ML, ML, SM, SC-SM, SC	A-4	95-100	80-100	50-95	25-75	19-34	3-15
	13-26	Loam, sandy clay loam, fine sandy loam, sandy loam	SC-SM, SC, CL	A-6	95-100	80-100	50-95	25-75	27-42	12-22
	26-70	Sandy clay loam, clay loam, loam	SC-SM, CL, SC	A-6, A-4	95-100	80-100	65-100	30-80	24-44	9-25
3A:										
Bibb------------	0-15	Loamy sand, sand, sandy loam, fine sandy loam, loam, silt loam	SC-SM, SM	A-1-b, A-2-4, A-3	98-100	95-100	50-100	5-90	0-31	NP-10
	15-42	Sandy loam, fine sandy loam, loam, silt loam, gravelly sandy loam	CL-ML, SC-SM	A-2-4, A-4, A-1-b	85-100	75-100	40-100	20-90	20-31	4-12
	42-65	Loamy sand, loamy fine sand, sand, sandy loam, fine sandy loam, loam, silt loam, gravelly sand	ML, CL-ML, SC-SM, SM	A-1-b, A-4, A-2-4, A-3	85-100	75-100	40-100	4-90	0-31	NP-12
Kinston---------	0-8	Fine sandy loam, sandy loam, loam, silt loam	SC-SM, SM	A-2-4, A-4	98-100	95-100	55-100	30-90	20-40	2-12
	8-43	Fine sandy loam, sandy loam, loam, silt loam, sandy clay loam, clay loam	SC, CL	A-6	98-100	95-100	55-100	30-90	27-47	12-24
	43-65	Loamy sand, sand, sandy loam, fine sandy loam, loam, sandy clay loam, clay loam	SC, SC-SM, SM	A-2-4, A-1-b, A-4, A-3	98-100	95-100	50-100	5-80	0-41	NP-21

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
4A:										
Bohicket	0-8	Silty clay loam, silty clay, clay	OH, CH, MH	A-7-5	100	100	90-100	75-95	51-116	21-40
	8-29	Silty clay loam, silty clay, clay, clay loam, sandy clay, mucky silty clay loam	OH, CH, MH	A-7-5	100	100	85-100	45-95	55-107	25-41
	29-65	Silty clay, sand, clay, mucky silty clay	OH, MH, CH	A-7-5	100	100	50-100	5-95	0-107	NP-41
5A:										
Bojac	0-6	Gravelly loamy sand, gravelly sandy loam, gravelly fine sandy loam, very gravelly loamy sand	SM, SC-SM	A-2-4, A-1-b	45-85	35-75	20-65	5-40	0-22	NP-4
	6-46	Gravelly fine sandy loam, gravelly loam, gravelly sandy loam, very gravelly fine sandy loam	SC-SM, SC	A-2-4, A-4	45-85	35-75	20-65	10-40	21-28	6-10
	46-65	Gravelly fine sand, gravelly loamy fine sand, very gravelly coarse sand	SC-SM, SM	A-1-b, A-2-4, A-3	45-85	35-75	15-65	2-35	0-20	NP-3
6A:										
Bojac	0-12	Fine sandy loam, sandy loam, loamy sand	CL-ML, ML, SC-SM, SM	A-4, A-2-4	95-100	92-100	45-85	15-55	0-25	NP-4
	12-46	Fine sandy loam, loam, sandy loam	CL, SC	A-2-4, A-4	95-100	92-100	55-95	25-75	21-28	6-10
	46-65	Fine sand, stratified coarse sand to loamy fine sand	SM, SP, SW-SM, SC-SM	A-2-4, A-1, A-3	90-100	80-100	40-85	4-45	0-21	NP-4

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
6B:										
Bojac-----------	0-12	Fine sandy loam, sandy loam, loamy sand	SM, ML, CL-ML, SC-SM	A-2-4, A-4	95-100	92-100	45-85	15-55	0-25	NP-4
	12-46	Fine sandy loam, loam, sandy loam	CL, SC	A-2-4, A-4	95-100	92-100	55-95	25-75	21-28	6-10
	46-65	Fine sand, stratified coarse sand to loamy fine sand	SM, SP, SW-SM, SC-SM	A-1, A-2-4, A-3	90-100	80-100	40-85	4-45	0-21	NP-4
7A:										
Catpoint--------	0-5	Sand, fine sand, loamy sand, loamy fine sand	SP-SM, SP, SM, SC-SM	A-1-b, A-2-4, A-3	95-100	92-100	45-85	4-45	0-20	NP-2
	5-49	Sand, loamy sand, fine sand, loamy fine sand	SC-SM, SP-SM, SW-SM, SW, SM	A-1-b, A-2-4, A-3	95-100	92-100	45-85	4-45	0-22	NP-6
	49-72	Sand, loamy sand, fine sand, loamy fine sand	SP-SM, SW-SM, SM	A-2-4, A-3, A-1-6,	90-100	80-100	40-85	4-45	0-22	NP-6
8A:										
Conetoe---------	0-29	Loamy fine sand, loamy sand, fine sand, sand	SC-SM, SM, SP-SM	A-2-4, A-3	100	100	50-85	5-45	0-26	NP-6
	29-52	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-2-4, A-4	100	100	60-90	30-55	20-33	6-15
	52-80	Fine sand, sand, loamy fine sand, loamy sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	100	50-85	5-45	0-22	NP-6
9A:										
Daleville-------	0-5	Silt loam, loam, fine sandy loam	CL-ML, CL	A-4	100	100	70-100	40-90	21-35	6-13
	5-65	Clay loam, sandy clay loam, loam, silty clay loam	SC, CL	A-6	100	100	80-100	35-95	31-46	13-25

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
10A:										
Emporia---------	0-16	Fine sandy loam, sandy loam, loam	CL, SC	A-2-4, A-4	95-100	92-100	55-95	25-75	19-33	3-12
	16-28	Loam, fine sandy loam, sandy loam, sandy clay loam, clay loam	SC, CL	A-6	95-100	92-100	55-100	25-80	27-44	12-25
	28-55	Sandy clay loam, clay loam, fine sandy loam, sandy loam, clay, sandy clay	CL, SC	A-2-4, A-4, A-6, A-7	95-100	92-100	55-100	25-95	26-55	10-32
	55-80	Clay loam, sandy loam, clay	SC, CL, SM, ML	A-7-6, A-2-4, A-4, A-6	95-100	92-100	55-100	25-95	18-55	2-32
10B:										
Emporia---------	0-16	Fine sandy loam, sandy loam, loam	CL, SC	A-4, A-2-4	95-100	92-100	55-95	25-75	19-33	3-12
	16-28	Loam, fine sandy loam, sandy loam, sandy clay loam, clay loam	CL, SC	A-6	95-100	92-100	55-100	25-80	27-44	12-25
	28-55	Sandy clay loam, clay loam, fine sandy loam, sandy loam, clay, sandy clay	CL, SC	A-7, A-6, A-4, A-2-4	95-100	92-100	55-100	25-95	26-55	10-32
	55-80	Clay loam, sandy loam, clay	SM, CL, NL, SC	A-4, A-6, A-2-4, A-7-6	95-100	92-100	55-100	25-95	18-55	2-32
11A:										
Eulonia---------	0-7	Fine sandy loam, loam, silt loam	SC, SC-SM	A-4	100	95-100	65-100	40-90	17-35	2-13
	7-31	Clay, sandy clay, clay loam	CH, CL	A-7-6	100	95-100	80-100	45-95	42-61	24-39
	31-45	Sandy clay loam, clay loam, sandy clay	CL, SC, SC-SM	A-6	100	95-100	75-100	35-80	29-53	13-32
	45-75	Sandy loam, sand, clay	SC, CL, SC-SM, SM, CL-ML	A-2-4, A-4, A-6	100	95-100	50-100	5-95	0-52	NP-32

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
11B:										
Eulonia---------	0-7	Fine sandy loam, loam, silt loam	SC-SM, SC	A-4	100	95-100	65-100	40-90	17-35	2-13
	7-31	Clay, sandy clay, clay loam	CH, CL	A-7-6	100	95-100	80-100	45-95	42-61	24-39
	31-45	Sandy clay loam, clay loam, sandy clay	SC-SM, CL, SC	A-6	100	95-100	75-100	35-80	29-53	13-32
	45-75	Sandy loam, sand, clay	SC-SM, SM, SC, CL, CL-ML	A-6, A-4, A-2-4	100	95-100	50-100	5-95	0-52	NP-32
12A:										
Eunola----------	0-10	Sandy loam, fine sandy loam	SC, SC-SM	A-2-4, A-4	100	92-100	55-85	25-55	21-35	6-13
	10-55	Sandy clay loam, sandy loam, clay loam, fine sandy loam	CL, SC, SC-SM	A-6	100	92-100	55-100	25-80	27-45	12-25
	55-65	Sandy loam, fine sandy loam, sandy clay loam, loamy sand, sand	SC-SM, SM, SC	A-1, A-2-4, A-4	100	92-100	45-90	4-55	0-36	NP-17
12B:										
Eunola----------	0-10	Sandy loam, fine sandy loam	SC, SC-SM	A-2-4, A-4	100	92-100	55-85	25-55	21-35	6-13
	10-55	Sandy clay loam, sandy loam, clay loam, fine sandy loam	CL, SC, SC-SM	A-6	100	92-100	55-100	25-80	27-45	12-25
	55-65	Sandy loam, fine sandy loam, sandy clay loam, loamy sand, sand	SC-SM, SM, SC	A-4, A-2-4, A-1	100	92-100	45-90	4-55	0-36	NP-17

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
13A:										
Kempsville------	0-18	Sandy loam, fine sandy loam	SM, SC-SM, CL-ML, ML	A-2-4, A-4	90-100	80-100	50-85	25-55	17-31	2-10
	18-44	Loam, fine sandy loam, sandy loam, sandy clay loam, clay loam	SC, CL	A-2-4, A-6, A-4	90-100	80-100	50-100	25-80	22-44	7-25
	44-80	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	SC, CL	A-6	90-100	80-100	50-100	25-80	27-44	12-25
13B:										
Kempsville------	0-18	Sandy loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-4, A-2-4	90-100	80-100	50-85	25-55	17-31	2-10
	18-44	Loam, fine sandy loam, sandy loam, sandy clay loam, clay loam	CL, SC	A-2-4, A-6, A-4	90-100	80-100	50-100	25-80	22-44	7-25
	44-80	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	CL, SC	A-6	90-100	80-100	50-100	25-80	27-44	12-25
14A:										
Kenansville-----	0-9	Sand, loamy sand, fine sand	SC-SM, SP-SM, SM	A-3, A-1-b, A-2-4	100	100	50-80	5-35	0-26	NP-6
	9-34	Loamy sand, sand, fine sand	SM, SP-SM, SC-SM	A-3, A-2-4, A-1-b	100	100	50-80	5-35	0-23	NP-6
	34-45	Sandy loam, fine sandy loam, sandy clay loam	SM, SC-SM	A-2-4, A-4	100	100	60-90	30-55	16-33	2-15
	45-70	Loamy sand, sand	SC-SM, SM, SP-SM	A-1-b, A-2-4, A-3	100	100	50-75	5-30	0-22	NP-6
15A:										
Lanexa----------	0-26	Mucky silty clay loam, mucky silty clay, mucky silt loam	OH	A-7-5	100	100	90-100	70-95	55-100	12-33
	26-48	Muck	OL, PT	A-8, A-4	100	100	98-100	95-100	0-21	NP-4
	48-80	Mucky silty clay, mucky clay	OH	A-7-5	100	100	90-100	80-95	68-109	23-40

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number—				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
16A:										
Mattan----------	0-14	Mucky silty clay loam, mucky clay loam, mucky silt loam, mucky loam	OH	A-7-5	100	100	85-100	60-95	48-85	7-23
	14-40	Muck	PT	A-8	100	100	97-100	95-100	---	---
	40-80	Mucky sandy clay loam, mucky loamy sand, stratified loamy sand to mucky silty clay loam	CL, ML, SC, SM	A-2-4, A-7-5, A-4, A-6	100	100	50-100	15-95	0-64	NP-24
17A:										
Munden----------	0-13	Loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam	SC-SM, SM	A-4, A-2-4	100	100	50-95	15-75	0-24	NP-6
	13-44	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-4, A-2-4	100	100	60-95	30-75	18-29	4-12
	44-60	Sand, fine sand, loamy sand, loamy fine sand	SP-SC, SP-SM, SM, SC-SM	A-3, A-2-4	100	100	50-85	5-45	0-24	NP-7
18A:										
Myatt-----------	0-7	Loam, fine sandy loam, sandy loam, loamy fine sand, loamy sand	CL-ML, CL	A-6, A-4	97-100	95-100	50-95	15-75	20-43	4-17
	7-17	Fine sandy loam, loam, sandy loam, loamy fine sand, loamy sand	SC, CL, CL-ML	A-6, A-4	97-100	95-100	50-95	15-75	19-39	4-17
	17-40	Sandy clay loam, clay loam, loam, fine sandy loam	CL, SC	A-6	97-100	95-100	65-100	40-80	27-45	12-25
	40-65	Coarse sand, gravelly sand, sandy loam, fine sandy loam, sandy clay loam, clay loam	SW-SM, SP-SM, CL, CL-ML, SC	A-4, A-6, A-2-4, A-1-b	75-95	60-92	30-90	3-75	0-40	NP-21

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
19A:										
Nansemond-------	0-16	Loamy fine sand, loamy sand, sandy loam, fine sandy loam	SM, SC-SM	A-4, A-2-4, A-1	95-100	92-100	45-85	15-55	16-24	1-6
	16-42	Sandy loam, fine sandy loam, gravelly sandy loam	SC, SC-SM	A-2-4, A-4	60-100	50-100	30-85	15-55	20-29	6-12
	42-60	Loamy sand, loamy fine sand, fine sand, sand, gravelly sand	SP-SM, SM, SC-SM	A-2-4, A-3, A-4, A-1	60-100	50-100	25-85	2-45	0-24	NP-7
20A:										
Osier-----------	0-7	Loamy fine sand, loamy sand, fine sand, sand	SC-SM, SM	A-4, A-2-4	100	100	50-85	5-45	0-33	NP-6
	7-30	Loamy fine sand, loamy sand, fine sand, sand	SM, SC-SM	A-3, A-4, A-2-4	100	100	50-85	5-45	0-23	NP-6
	30-60	Sand, fine sand, loamy sand, loamy fine sand, coarse sand	SC-SM, SP-SM, SM	A-2-4, A-3	100	100	45-85	4-45	0-23	NP-6
21A:										
Pactolus--------	0-11	Loamy sand, loamy fine sand, fine sand, sand	SC-SM, SP-SM, SM	A-2-4, A-3	100	100	50-85	5-45	0-28	NP-7
	11-33	Loamy sand, sand, loamy fine sand, fine sand	SP-SM, SM, SC-SM	A-2-4, A-3	100	100	50-85	5-45	0-24	NP-7
	33-60	Sand, loamy sand, loamy fine sand, fine sand	SP-SM, SM, SC-SM	A-3, A-2-4	100	100	50-85	5-45	0-24	NP-7

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
22D:										
Remlik----------	0-22	Loamy sand, loamy fine sand, sand, fine sand, gravelly sand	SP-SM, SP, SM, SC-SM	A-1-b, A-2-4, A-3	60-100	50-100	25-85	2-45	0-24	NP-6
	22-38	Sandy clay loam, sandy loam, fine sandy loam, gravelly sandy loam	SC, SC-SM	A-4, A-6, A-2-4	60-100	50-100	30-90	15-55	18-40	4-21
	38-70	Sandy loam, fine sandy loam, loamy sand, loamy fine sand, gravelly sandy loam	SC, SC-SM, SM, SP-SM	A-1-b, A-6, A-4, A-2-4	60-100	50-100	25-85	8-55	15-31	1-13
Nevarc----------	0-6	Sandy loam, fine sandy loam, loam, silt loam	SC-SM, SC	A-2-4, A-4	90-100	80-100	50-100	25-90	20-33	4-12
	6-40	Clay, clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay	CL, CH	A-7-6	90-100	80-100	65-100	30-95	41-63	22-40
	40-60	Clay, stratified gravelly sand to clay	SC, SC-SM, SM, CL, CH	A-7-6, A-1-b, A-6, A-4, A-2-4	70-100	50-100	25-100	2-95	0-57	NP-36
22F:										
Remlik----------	0-22	Loamy sand, loamy fine sand, sand, fine sand, gravelly sand	SP-SM, SP, SM, SC-SM	A-2-4, A-3, A-1-b	60-100	50-100	25-85	2-45	0-24	NP-6
	22-38	Sandy clay loam, sandy loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-4, A-2-4, A-6	60-100	50-100	30-90	15-55	18-40	4-21
	38-70	Sandy loam, fine sandy loam, loamy sand, loamy fine sand, gravelly sandy loam	SC, SP-SM, SM, SC-SM	A-4, A-1-b, A-6, A-2-4	60-100	50-100	25-85	8-55	15-31	1-13

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
22F:										
Nevarc----------	0-6	Sandy loam, fine sandy loam, loam, silt loam	SC-SM, SC	A-2-4, A-4	90-100	80-100	50-100	25-90	20-33	4-12
	6-40	Clay, clay loam, sandy clay loam, silty clay loam, sandy clay, silty clay	CL, CH	A-7-6	90-100	80-100	65-100	30-95	41-63	22-40
	40-60	Clay, stratified gravelly sand to clay	CL, CH, SC, SC-SM, SM	A-1-b, A-2-4, A-4. A-6, A-7-6	70-100	50-100	25-100	2-95	0-57	NP-36
23A:										
Riverview-------	0-12	Loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam, silt loam	SM, SC-SM	A-4, A-2-4	100	100	50-100	15-90	0-26	NP-6
	12-50	Loam, fine sandy loam, silt loam, clay loam, sandy clay loam, silty clay loam	CL	A-6	100	100	70-100	40-95	28-45	12-25
	50-65	Loam, fine sandy loam, sandy loam, loamy fine sand, loamy sand, sand	SC-SM, CL	A-2-4, A-6, A-4	100	100	50-95	5-75	0-38	NP-19
24A:										
Roanoke---------	0-12	Silt loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4	95-100	85-100	60-100	35-90	21-41	6-19
	12-23	Clay loam, silty clay loam, clay, silty clay	CH, CL	A-6, A-7-6	95-100	85-100	75-100	60-95	31-59	13-36
	23-46	Clay, silty clay, clay loam, silty clay loam	CH, CL	A-7-6	95-100	85-100	75-100	60-95	43-67	25-44
	46-65	Sandy clay loam, stratified sand to clay	ML, SC, CH, CL-ML, SM	A-6, A-1, A-2-4, A-4	90-100	80-100	40-100	4-95	18-58	2-36

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
25A:										
Seabrook--------	0-4	Loamy fine sand, loamy sand, fine sand, sand	SM, SC-SM	A-1-b, A-2-4, A-4, A-3	90-100	80-100	40-85	4-45	0-28	NP-7
	4-41	Loamy fine sand, loamy sand, fine sand, sand	SC-SM, SM	A-2-4, A-3, A-4, A-1-b	90-100	80-100	40-85	4-45	0-25	NP-7
	41-72	Sand, fine sand, loamy fine sand, loamy sand, gravelly sand	SP-SM, SM, SC-SM	A-2-4, A-1-b, A-3	70-100	50-100	25-85	2-45	0-24	NP-7
26A:										
Slagle----------	0-14	Loam, fine sandy loam, sandy loam	CL, CL-ML	A-4, A-6	95-100	92-100	55-95	25-75	21-41	6-19
	14-48	Clay loam, sandy clay loam, loam, fine sandy loam, sandy loam	CL, SC, SC-SM	A-6	95-100	92-100	55-100	30-80	27-44	12-25
	48-62	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	SC, CL	A-6, A-7-6	95-100	92-100	55-100	30-80	29-50	12-29
26B:										
Slagle----------	0-14	Loam, fine sandy loam, sandy loam	CL-ML, CL	A-4, A-6	95-100	92-100	55-95	25-75	21-41	6-19
	14-48	Clay loam, sandy clay loam, loam, fine sandy loam, sandy loam	SC-SM, SC, CL	A-6	95-100	92-100	55-100	30-80	27-44	12-25
	48-62	Sandy clay loam, clay loam, loam, fine sandy loam, sandy loam	SC, CL	A-6, A-7-6	95-100	92-100	55-100	30-80	29-50	12-29

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
27A:										
State-----------	0-10	Loamy fine sand, fine sandy loam, very fine sandy loam, loam	SC-SM, SM	A-2-4	95-100	92-100	65-95	25-75	0-28	NP-10
	10-50	Sandy clay loam, clay loam, loam, sandy loam	CL, SC	A-6	95-100	92-100	55-100	25-80	27-43	12-24
	50-65	Loamy fine sand, loamy sand, sand, sandy loam, gravelly sand	SP-SM, SM, SC-SM	A-4, A-2-4, A-3	75-100	60-100	30-85	3-45	0-27	NP-10
27B:										
State-----------	0-10	Loamy fine sand, fine sandy loam, very fine sandy loam, loam	SC-SM, SM	A-2-4	95-100	92-100	65-95	25-75	0-28	NP-10
	10-50	Sandy clay loam, clay loam, loam, sandy loam	CL, SC	A-6	95-100	92-100	55-100	25-80	27-43	12-24
	50-65	Loamy fine sand, loamy sand, sand, sandy loam, gravelly sand	SC-SM, SP-SM, SM	A-4, A-3, A-2-4	75-100	60-100	30-85	3-45	0-27	NP-10
28A:										
Suffolk---------	0-10	Loamy sand, sandy loam, fine sandy loam	SM, SC-SM	A-1-b, A-2-4, A-4	95-100	92-100	45-85	15-55	16-24	1-6
	10-38	Sandy loam, fine sandy loam, loam, sandy clay loam	SC, CL	A-6, A-2-4, A-4	95-100	92-100	55-95	25-75	20-43	6-23
	38-65	Sand, fine sand, loamy fine sand, loamy sand, gravelly sand	SM, SC-SM, SP-SC, SP	A-2-4, A-1-b, A-4	75-100	55-100	30-85	3-45	15-22	1-6

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
28A:										
Rumford	0-7	Sandy loam, fine sandy loam, loamy sand, loamy fine sand	SM, SC-SM	A-2-4, A-4	90-100	80-100	40-85	12-55	18-31	3-10
	7-30	Sandy loam, fine sandy loam, sandy clay loam	SC-SM, SC	A-6, A-2-4, A-4	90-100	80-100	50-90	25-55	18-36	4-17
	30-37	Loamy sand, sandy loam, fine sandy loam, loamy fine sand	SC, SC-SM	A-1-b, A-2-4, A-4	90-100	80-100	40-85	12-55	16-31	2-13
	37-65	Sand, fine sand, loamy sand, loamy fine sand	SP-SM, SP, SM	A-1-b, A-2-4, A-3, A-4	45-100	35-100	20-85	2-45	0-27	NP-10
28B:										
Suffolk	0-10	Loamy sand, sandy loam, fine sandy loam	SM, SC-SM	A-4, A-1-b, A-2-4	95-100	92-100	45-85	15-55	16-24	1-6
	10-38	Sandy loam, fine sandy loam, loam, sandy clay loam	SC, CL	A-4, A-2-4, A-6	95-100	92-100	55-95	25-75	20-43	6-23
	38-65	Sand, fine sand, loamy fine sand, loamy sand, gravelly sand	SM, SP, SC-SM, SP-SC	A-1-b, A-2-4, A-4	75-100	55-100	30-85	3-45	15-22	1-6
Rumford	0-7	Sandy loam, fine sandy loam, loamy sand, loamy fine sand	SC-SM, SM	A-2-4, A-4	90-100	80-100	40-85	12-55	18-31	3-10
	7-30	Sandy loam, fine sandy loam, sandy clay loam	SC, SC-SM	A-6, A-2-4, A-4	90-100	80-100	50-90	25-55	18-36	4-17
	30-37	Loamy sand, sandy loam, fine sandy loam, loamy fine sand	SC, SC-SM	A-4, A-2-4, A-1-b	90-100	80-100	40-85	12-55	16-31	2-13
	37-65	Sand, fine sand, loamy sand, loamy fine sand	SP, SM, SP-SM	A-2-4, A-3, A-4, A-1-b	45-100	35-100	20-85	2-45	0-27	NP-10

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In								Pct	
29B:										
Tarboro---------	0-9	Sand, loamy sand	SW-SM, SM, SP-SC	A-2-4, A-3, A-1-b	100	100	50-75	5-30	0-26	NP-7
	9-80	Sand, loamy sand	SP-SM, SM, SW-SM	A-1-b, A-3, A-2-4	100	100	50-75	5-30	0-20	NP-4
29D:										
Tarboro---------	0-9	Sand, loamy sand	SW-SM, SM, SP-SC	A-3, A-2-4, A-1-b	100	100	50-75	5-30	0-26	NP-7
	9-80	Sand, loamy sand	SW-SM, SM, SP-SM	A-3, A-2-4, A-1-b	100	100	50-75	5-30	0-20	NP-4
29F:										
Tarboro---------	0-9	Sand, loamy sand	SW-SM, SP-SC, SM	A-2-4, A-3, A-1-b	100	100	50-75	5-30	0-26	NP-7
	9-80	Sand, loamy sand	SM, SP-SM, SW-SM	A-1-b, A-2-4, A-3	100	100	50-75	5-30	0-20	NP-4
30A:										
Tomotley--------	0-17	Fine sandy loam, sandy loam, loam, loamy fine sand, loamy sand	SM, SC-SM	A-2-4, A-4	95-100	92-100	45-95	15-75	18-43	2-13
	17-52	Loam, fine sandy loam, sandy loam, clay loam, sandy clay loam	SC-SM, SC, CL	A-6	95-100	92-100	55-100	25-80	28-45	12-25
	52-65	Sandy loam, sand, clay	CL-ML, CL, SC, SC-SM	A-1-b, A-2-4, A-4, A-6, A-7-6	95-100	92-100	45-100	4-95	15-53	1-32
31B.										
Udorthents										
32A:										
Wehadkee--------	0-10	Loam, silt loam	ML, SC-SM	A-4	100	100	85-100	60-90	20-41	2-13
	10-44	Loam, silt loam, clay loam, silty clay loam, sandy clay loam	SC, CL	A-6, A-4, A-7	100	100	80-100	35-95	24-45	9-25
	44-70	Clay loam, loam, sandy loam, loamy sand, sand	SC, CL, CL-ML, ML	A-7, A-6, A-4, A-1-b, A-2-4	100	100	50-100	5-80	0-45	NP-25

Table 16.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In								Pct	
33A:										
Wickham---------	0-15	Loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	SM, SC-SM	A-2-4, A-4, A-1-b	95-100	92-100	45-95	15-75	16-24	1-6
	15-19	Fine sandy loam, sandy loam, loam	CL, SC	A-6, A-4, A-2-4	95-100	92-100	55-95	30-75	20-36	6-17
	19-37	Sandy clay loam, clay loam, loam, sandy loam	SC, CL	A-6, A-7-6	95-100	92-100	55-100	30-80	27-44	12-25
	37-70	Loamy fine sand, fine sand, sand, sandy clay loam	SC-SM, SM, CL	A-2-4, A-4, A-6, A-1-b, A-3	90-100	80-100	40-90	4-55	0-40	NP-21
33B:										
Wickham---------	0-15	Loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	SM, SC-SM	A-2-4, A-1-b, A-4	95-100	92-100	45-95	15-75	16-24	1-6
	15-19	Fine sandy loam, sandy loam, loam	CL, SC	A-4, A-6, A-2-4	95-100	92-100	55-95	30-75	20-36	6-17
	19-37	Sandy clay loam, clay loam, loam, sandy loam	CL, SC	A-7-6, A-6	95-100	92-100	55-100	30-80	27-44	12-25
	37-70	Loamy fine sand, fine sand, sand, sandy clay loam	SC-SM, SM, CL	A-2-4, A-6, A—1-b, A-3, A-4	90-100	80-100	40-90	4-55	0-40	NP-21
W.										
Water										

Table 17.—Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
1A:														
Altavista-------	0-16	25-92	1-45	5-10	1.40-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.10	.10	5	2	134
	16-40	20-80	5-45	18-35	1.30-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-0.5	.15	.15			
	40-65	55-99	0-30	2-20	1.40-1.70	4.00-141.00	0.05-0.15	0.0-2.9	0.0-0.2	.10	.10			
1B:														
Altavista-------	0-16	25-92	1-45	5-10	1.40-1.60	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.10	.10	5	3	86
	16-40	20-80	5-45	18-35	1.30-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-0.5	.15	.15			
	40-65	55-99	0-30	2-20	1.40-1.70	4.00-141.00	0.05-0.15	0.0-2.9	0.0-0.2	.10	.10			
2A:														
Bama------------	0-13	30-80	5-45	7-22	1.30-1.60	4.00-42.00	0.08-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86
	13-26	30-75	5-45	18-32	1.40-1.55	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	26-70	30-75	5-45	15-35	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.2	.15	.15			
2B:														
Bama------------	0-13	30-80	5-45	7-22	1.30-1.60	4.00-42.00	0.08-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86
	13-26	30-75	5-45	18-32	1.40-1.55	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	26-70	30-75	5-45	15-35	1.40-1.60	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.2	.15	.15			
3A:														
Bibb------------	0-15	20-98	1-75	2-15	1.50-1.75	42.00-141.00	0.06-0.10	0.0-2.9	0.5-4.0	.10	.10	5	1	220
	15-42	20-98	1-75	8-18	1.45-1.70	4.00-14.00	0.10-0.20	0.0-2.9	0.5-2.0	.20	.20			
	42-65	20-98	1-75	2-18	1.45-1.75	4.00-141.00	0.04-0.20	0.0-2.9	0.5-3.0	.10	.10			
Kinston---------	0-8	40-80	2-75	5-18	1.40-1.60	14.00-42.00	0.13-0.19	0.0-2.9	2.0-5.0	.24	.24	5	3	86
	8-43	25-80	5-75	18-35	1.30-1.50	4.00-14.00	0.14-0.18	0.0-2.9	0.0-2.0	.28	.28			
	43-65	25-99	0-45	2-30	1.30-1.70	4.00-42.00	0.05-0.15	0.0-2.9	0.0-1.0	.10	.10			
4A:														
Bohicket--------	0-8	1-40	10-65	30-60	1.20-1.40	0.42-1.40	0.12-0.32	6.0-8.9	5.0-25	.28	.28	5	8	0
	8-29	1-55	10-65	35-60	1.30-1.60	0.01-0.42	0.10-0.28	6.0-8.9	5.0-20	.28	.28			
	29-65	1-90	5-65	2-60	1.30-1.60	0.01-141.00	0.02-0.28	6.0-8.9	5.0-20	.15	.15			
5A:														
Bojac-----------	0-6	55-90	0-45	3-8	1.20-1.50	42.00-141.00	0.03-0.08	0.0-2.9	0.5-1.0	.05	.10	5	2	134
	6-46	35-80	5-40	11-16	1.35-1.55	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.20	.32			
	46-65	70-98	0-25	1-6	1.30-1.80	42.00-141.00	0.02-0.05	0.0-2.9	0.0-0.5	.10	.20			
6A:														
Bojac-----------	0-12	50-88	0-45	3-8	1.20-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	12-46	35-80	5-45	11-16	1.35-1.55	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.32	.32			
	46-65	75-99	0-25	1-8	1.30-1.50	42.00-141.00	0.02-0.07	0.0-2.9	0.0-0.2	.20	.20			

Table 17.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
6B:														
Bojac	0-12	50-88	0-45	3-8	1.20-1.50	14.00-42.00	0.08-0.16	0.0-2.9	0.5-2.0	.28	.28	3	3	86
	12-46	35-80	5-45	11-16	1.35-1.55	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.32	.32			
	46-65	75-99	0-25	1-8	1.30-1.50	42.00-141.00	0.02-0.07	0.0-2.9	0.0-0.2	.20	.20			
7A:														
Catpoint	0-5	75-99	0-25	0-5	1.30-1.60	42.00-141.00	0.04-0.08	0.0-2.9	0.5-1.0	.10	.10	5	1	220
	5-49	75-99	0-25	0-10	1.45-1.65	42.00-141.00	0.02-0.10	0.0-2.9	0.0-0.2	.10	.10			
	49-72	55-99	0-40	0-10	1.45-1.65	42.00-141.00	0.01-0.08	0.0-2.9	0.0-0.2	.10	.10			
8A:														
Conetoe	0-29	75-99	0-25	2-10	1.60-1.75	42.00-141.00	0.05-0.10	0.0-2.9	0.5-2.0	.24	.24	5	2	134
	29-52	50-80	5-45	10-22	1.40-1.60	14.00-42.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	52-80	75-99	0-25	2-10	1.60-1.70	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.2	.20	.20			
9A:														
Daleville	0-5	20-75	5-75	10-20	1.40-1.50	4.00-14.00	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	5	5	56
	5-65	10-75	5-65	20-35	1.40-1.50	0.42-1.40	0.16-0.20	3.0-5.9	0.0-0.5	.24	.24			
10A:														
Emporia	0-16	30-80	5-45	7-18	1.30-1.40	14.00-42.00	0.10-0.17	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	16-28	25-80	5-45	18-35	1.35-1.45	1.40-14.00	0.10-0.18	0.0-2.9	0.0-0.5	.28	.28			
	28-55	20-80	5-45	15-45	1.45-1.60	1.40-4.00	0.10-0.16	3.0-5.9	0.0-0.5	.15	.15			
	55-80	20-80	5-45	5-45	1.45-1.60	4.00-14.00	0.08-0.18	3.0-5.9	0.0-0.5	.24	.24			
10B:														
Emporia	0-16	30-80	5-45	7-18	1.30-1.40	14.00-42.00	0.10-0.17	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	16-28	25-80	5-45	18-35	1.35-1.45	1.40-14.00	0.10-0.18	0.0-2.9	0.0-0.5	.28	.28			
	28-55	20-80	5-45	15-45	1.45-1.60	1.40-4.00	0.10-0.16	3.0-5.9	0.0-0.5	.15	.15			
	55-80	20-80	5-45	5-45	1.45-1.60	4.00-14.00	0.08-0.18	3.0-5.9	0.0-0.5	.24	.24			
11A:														
Eulonia	0-7	50-88	0-75	5-20	1.40-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	7-31	10-60	5-45	35-55	1.50-1.65	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	31-45	25-75	5-45	20-45	1.50-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.15	.15			
	45-75	25-98	5-45	3-45	1.50-1.70	4.00-42.00	0.04-0.14	0.0-2.9	0.0-0.2	.24	.24			
11B:														
Eulonia	0-7	50-88	0-75	5-20	1.40-1.60	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	7-31	10-60	5-45	35-55	1.50-1.65	1.40-4.00	0.12-0.16	0.0-2.9	0.0-0.5	.20	.20			
	31-45	25-75	5-45	20-45	1.50-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.15	.15			
	45-75	25-98	5-45	3-45	1.50-1.70	4.00-42.00	0.04-0.14	0.0-2.9	0.0-0.2	.24	.24			
12A:														
Eunola	0-10	55-80	2-30	10-20	1.35-1.65	14.00-42.00	0.10-0.14	0.0-2.9	0.5-2.0	.20	.20	5	3	86
	10-55	25-80	5-25	18-35	1.35-1.65	4.00-14.00	0.12-0.17	0.0-2.9	0.2-1.0	.15	.15			
	55-65	50-88	0-25	2-25	1.35-1.65	14.00-42.00	0.04-0.16	0.0-2.9	0.0-0.5	.24	.24			

Table 17.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
12B:														
Eunola----------	0-10	55-80	2-30	10-20	1.35-1.65	14.00-42.00	0.10-0.14	0.0-2.9	0.5-2.0	.20	.20	5	3	86
	10-55	25-80	5-25	18-35	1.35-1.65	4.00-14.00	0.12-0.17	0.0-2.9	0.2-1.0	.15	.15			
	55-65	50-88	0-25	2-25	1.35-1.65	14.00-42.00	0.04-0.16	0.0-2.9	0.0-0.5	.24	.24			
13A:														
Kempsville------	0-18	55-80	2-35	5-15	1.30-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	18-44	25-75	20-50	12-35	1.30-1.45	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	44-80	25-75	2-45	18-35	1.35-1.65	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.2	.15	.15			
13B:														
Kempsville------	0-18	55-80	2-35	5-15	1.30-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	18-44	25-75	20-50	12-35	1.30-1.45	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.32	.32			
	44-80	25-75	2-45	18-35	1.35-1.65	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.2	.15	.15			
14A:														
Kenansville-----	0-9	75-99	0-25	2-10	1.50-1.70	42.00-141.00	0.03-0.08	0.0-2.9	0.5-2.0	.10	.10	5	1	220
	9-34	75-99	0-25	2-10	1.50-1.75	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.5	.10	.10			
	34-45	50-80	2-40	5-22	1.30-1.50	4.00-42.00	0.10-0.16	0.0-2.9	0.0-0.2	.24	.24			
	45-70	75-99	0-25	1-10	1.50-1.70	42.00-141.00	0.01-0.05	0.0-2.9	0.0-0.2	.10	.10			
15A:														
Lanexa----------	0-26	2-30	40-75	20-50	1.10-1.25	1.40-14.00	0.10-0.22	0.0-2.9	12-22	.37	.37	1	2	134
	26-48	0-10	0-80	0-10	0.20-0.80	4.00-14.00	0.22-0.30	0.0-2.9	20-65	---	---			
	48-80	1-30	15-60	35-60	1.10-1.25	0.01-4.00	0.12-0.18	3.0-5.9	12-22	.37	.37			
16A:														
Mattan----------	0-14	5-75	5-65	12-35	1.10-1.25	4.00-14.00	0.10-0.20	0.0-2.9	12-20	.32	.32	--	8	0
	14-40	0-10	0-80	2-10	0.20-0.80	4.00-14.00	0.22-0.26	0.0-2.9	20-60	---	---			
	40-80	10-88	1-65	2-35	1.20-1.50	4.00-14.00	0.08-0.18	0.0-2.9	2.0-10	.15	.15			
17A:														
Munden----------	0-13	35-88	1-45	3-10	1.20-1.35	14.00-42.00	0.06-0.10	0.0-2.9	0.5-1.0	.10	.10	4	2	134
	13-44	35-80	2-45	8-18	1.20-1.35	4.00-42.00	0.08-0.18	0.0-2.9	0.0-0.2	.24	.24			
	44-60	72-99	0-25	2-12	1.35-1.55	14.00-141.00	0.04-0.08	0.0-2.9	0.0-0.2	.10	.10			
18A:														
Myatt-----------	0-7	30-88	1-45	8-25	1.30-1.60	4.00-14.00	0.16-0.24	0.0-2.9	0.5-4.0	.24	.24	5	5	56
	7-17	30-88	1-45	8-25	1.30-1.65	4.00-14.00	0.16-0.24	0.0-2.9	0.2-2.0	.28	.28			
	17-40	25-80	20-45	18-35	1.30-1.50	1.40-14.00	0.12-0.20	0.0-2.9	0.0-1.0	.15	.15			
	40-65	25-99	0-45	2-30	1.30-1.50	1.40-14.00	0.02-0.20	0.0-2.9	0.0-0.5	.05	.10			
19A:														
Nansemond-------	0-16	50-88	0-45	4-10	1.20-1.45	14.00-141.00	0.05-0.10	0.0-2.9	0.5-1.0	.24	.24	3	2	134
	16-42	45-80	2-30	10-18	1.25-1.45	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.2	.24	.24			
	42-60	72-99	0-20	2-12	1.35-1.55	42.00-141.00	0.02-0.10	0.0-2.9	0.0-0.2	.10	.10			

Table 17.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
20A:														
Osier-----------	0-7	72-99	0-20	2-10	1.35-1.60	42.00-141.00	0.10-0.15	0.0-2.9	1.0-5.0	.24	.24	5	3	86
	7-30	72-99	0-20	2-10	1.40-1.60	42.00-141.00	0.03-0.10	0.0-2.9	0.0-0.5	.28	.28			
	30-60	72-99	0-20	2-10	1.40-1.60	141.00-141.00	0.02-0.05	0.0-2.9	0.0-0.5	.10	.10			
21A:														
Pactolus--------	0-11	72-99	0-20	2-12	1.60-1.75	42.00-141.00	0.05-0.10	0.0-2.9	0.5-2.0	.10	.10	5	2	134
	11-33	72-99	0-20	2-12	1.60-1.75	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.2	.10	.10			
	33-60	72-99	0-20	2-12	1.60-1.75	42.00-141.00	0.03-0.07	0.0-2.9	0.0-0.2	.10	.10			
22D:														
Remlik----------	0-22	72-99	0-20	0-10	1.20-1.50	42.00-141.00	0.04-0.08	0.0-2.9	0.5-1.0	.10	.10	5	1	250
	22-38	45-82	5-30	8-30	1.20-1.35	4.00-14.00	0.10-0.17	0.0-2.9	0.0-0.5	.15	.15			
	38-70	45-82	5-30	4-20	1.25-1.40	4.00-42.00	0.04-0.16	0.0-2.9	0.0-0.2	.24	.24			
Nevarc----------	0-6	15-80	5-75	8-18	1.30-1.50	14.00-42.00	0.08-0.18	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	6-40	5-75	15-65	32-55	1.30-1.50	0.42-1.40	0.10-0.17	3.0-5.9	0.0-0.5	.20	.20			
	40-60	15-99	0-35	2-50	1.30-1.55	0.42-141.00	0.04-0.12	0.0-2.9	0.0-0.2	.20	.20			
22F:														
Remlik----------	0-22	72-99	0-20	0-10	1.20-1.50	42.00-141.00	0.04-0.08	0.0-2.9	0.5-1.0	.10	.10	5	1	250
	22-38	45-82	5-30	8-30	1.20-1.35	4.00-14.00	0.10-0.17	0.0-2.9	0.0-0.5	.15	.15			
	38-70	45-82	5-30	4-20	1.25-1.40	4.00-42.00	0.04-0.16	0.0-2.9	0.0-0.2	.24	.24			
Nevarc----------	0-6	15-80	5-75	8-18	1.30-1.50	14.00-42.00	0.08-0.18	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	6-40	5-75	15-65	32-55	1.30-1.50	0.42-1.40	0.10-0.17	3.0-5.9	0.0-0.5	.20	.20			
	40-60	15-99	0-35	2-50	1.30-1.55	0.42-141.00	0.04-0.12	0.0-2.9	0.0-0.2	.20	.20			
23A:														
Riverview-------	0-12	30-88	0-75	3-10	1.35-1.65	14.00-42.00	0.10-0.14	0.0-2.9	0.5-2.0	.24	.24	5	2	134
	12-50	15-75	5-75	18-35	1.20-1.40	4.00-14.00	0.15-0.22	0.0-2.9	0.5-1.0	.32	.32			
	50-65	15-98	5-75	2-27	1.20-1.50	4.00-141.00	0.05-0.18	0.0-2.9	0.1-0.5	.32	.32			
24A:														
Roanoke---------	0-12	15-75	5-75	10-27	1.20-1.50	4.00-14.00	0.14-0.22	0.0-2.9	0.5-2.0	.43	.43	4	5	56
	12-23	5-45	30-65	20-50	1.20-1.50	2.00-14.00	0.16-0.19	3.0-5.9	0.0-0.5	.24	.24			
	23-46	5-45	15-65	35-60	1.35-1.65	0.42-1.40	0.10-0.19	3.0-5.9	0.0-0.5	.20	.20			
	46-65	5-99	5-35	5-50	1.20-1.50	0.42-141.00	0.04-0.14	3.0-5.9	0.0-0.2	.15	.15			
25A:														
Seabrook--------	0-4	72-99	0-25	2-12	1.30-1.60	42.00-141.00	0.05-0.11	0.0-2.9	0.5-2.0	.24	.24	5	2	134
	4-41	72-99	3-20	2-12	1.30-1.60	42.00-141.00	0.02-0.09	0.0-2.9	0.0-0.5	.28	.28			
	41-72	72-99	0-25	2-12	1.30-1.65	42.00-141.00	0.02-0.09	0.0-2.9	0.0-0.2	.10	.10			

Table 17.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
26A:														
Slagle----------	0-14	30-80	5-45	10-27	1.25-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.32	.32	5	5	56
	14-48	25-80	5-45	18-35	1.30-1.45	4.00-14.00	0.10-0.18	0.0-2.9	0.0-0.5	.24	.24			
	48-62	15-80	5-45	18-40	1.35-1.60	0.42-4.00	0.12-0.16	3.0-5.9	0.0-0.2	.15	.15			
26B:														
Slagle----------	0-14	30-80	5-45	10-27	1.25-1.40	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.32	.32	5	5	56
	14-48	25-80	5-45	18-35	1.30-1.45	4.00-14.00	0.10-0.18	0.0-2.9	0.0-0.5	.24	.24			
	48-62	15-80	5-45	18-40	1.35-1.60	0.42-4.00	0.12-0.16	3.0-5.9	0.0-0.2	.15	.15			
27A:														
State-----------	0-10	30-88	0-45	2-15	1.35-1.45	14.00-42.00	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28	5	2	134
	10-50	25-75	2-45	18-34	1.35-1.50	4.00-14.00	0.14-0.19	0.0-2.9	0.0-0.5	.15	.15			
	50-65	50-99	0-45	2-15	1.35-1.50	14.00-141.00	0.02-0.10	0.0-2.9	0.0-0.2	.28	.28			
27B:														
State-----------	0-10	30-88	0-45	2-15	1.35-1.45	14.00-42.00	0.06-0.09	0.0-2.9	0.5-1.0	.28	.28	5	2	134
	10-50	25-75	2-45	18-34	1.35-1.50	4.00-14.00	0.14-0.19	0.0-2.9	0.0-0.5	.15	.15			
	50-65	50-99	0-45	2-15	1.35-1.50	14.00-141.00	0.02-0.10	0.0-2.9	0.0-0.2	.28	.28			
28A:														
Suffolk---------	0-10	60-88	0-25	4-10	1.40-1.50	14.00-141.00	0.05-0.10	0.0-2.9	0.5-1.0	.10	.10	5	2	134
	10-38	30-80	2-30	10-33	1.40-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	38-65	72-99	0-25	4-10	1.40-1.50	14.00-141.00	0.04-0.10	0.0-2.9	0.0-0.2	.10	.10			
Rumford---------	0-7	55-88	0-40	6-15	1.25-1.45	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	7-30	50-80	2-25	8-25	1.25-1.45	14.00-42.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	30-37	50-99	0-25	5-20	1.25-1.50	14.00-141.00	0.06-0.11	0.0-2.9	0.0-0.2	.10	.10			
	37-65	50-99	0-25	2-15	1.25-1.50	14.00-141.00	0.04-0.10	0.0-2.9	0.0-0.2	.10	.10			
28B:														
Suffolk---------	0-10	60-88	0-25	4-10	1.40-1.50	14.00-141.00	0.05-0.10	0.0-2.9	0.5-1.0	.10	.10	5	2	134
	10-38	30-80	2-30	10-33	1.40-1.50	4.00-14.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	38-65	72-99	0-25	4-10	1.40-1.50	14.00-141.00	0.04-0.10	0.0-2.9	0.0-0.2	.10	.10			
Rumford---------	0-7	55-88	0-40	6-15	1.25-1.45	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.24	4	3	86
	7-30	50-80	2-25	8-25	1.25-1.45	14.00-42.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
	30-37	50-99	0-25	5-20	1.25-1.50	14.00-141.00	0.06-0.11	0.0-2.9	0.0-0.2	.10	.10			
	37-65	50-99	0-25	2-15	1.25-1.50	14.00-141.00	0.04-0.10	0.0-2.9	0.0-0.2	.10	.10			
29B:														
Tarboro---------	0-9	72-99	0-25	3-12	1.60-1.75	42.00-141.00	0.05-0.09	0.0-2.9	0.5-1.0	.10	.10	5	2	134
	9-80	72-99	0-20	2-7	1.60-1.75	141.00-141.00	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			
29D:														
Tarboro---------	0-9	72-99	0-25	3-12	1.60-1.75	42.00-141.00	0.05-0.09	0.0-2.9	0.5-1.0	.10	.10	5	2	134
	9-80	72-99	0-20	2-7	1.60-1.75	141.00-141.00	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			

Table 17.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
29F:														
Tarboro---------	0-9	72-99	0-25	3-12	1.60-1.75	42.00-141.00	0.05-0.09	0.0-2.9	0.5-1.0	.10	.10	5	2	134
	9-80	72-99	0-20	2-7	1.60-1.75	141.00-141.00	0.02-0.06	0.0-2.9	0.0-0.2	.10	.10			
30A:														
Tomotley--------	0-17	30-90	0-45	5-20	1.30-1.60	14.00-42.00	0.10-0.15	0.0-2.9	1.0-6.0	.28	.28	5	3	86
	17-52	25-75	5-45	18-35	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.5-1.0	.32	.32			
	52-65	25-95	5-45	4-45	1.30-1.60	4.00-141.00	0.04-0.18	0.0-2.9	0.0-0.5	.24	.24			
31B.														
Udorthents														
32A:														
Wehadkee--------	0-10	15-80	5-75	5-20	1.35-1.60	14.00-42.00	0.10-0.22	0.0-2.9	2.0-5.0	.24	.24	5	3	86
	10-44	15-75	5-75	15-35	1.30-1.50	4.00-14.00	0.16-0.20	0.0-2.9	0.0-1.0	.32	.32			
	44-70	25-99	0-45	2-35	1.30-1.50	4.00-141.00	0.04-0.20	0.0-2.9	0.0-1.0	.24	.24			
33A:														
Wickham---------	0-15	30-90	1-45	4-10	1.60-1.70	14.00-42.00	0.05-0.08	0.0-2.9	0.5-1.0	.24	.24	5	2	134
	15-19	25-75	5-45	10-25	1.30-1.50	4.00-14.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
	19-37	25-75	5-45	18-35	1.30-1.50	4.00-14.00	0.12-0.17	0.0-2.9	0.0-0.5	.15	.15			
	37-70	50-99	0-25	2-30	1.40-1.70	4.00-141.00	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
33B:														
Wickham---------	0-15	30-90	1-45	4-10	1.60-1.70	14.00-42.00	0.05-0.08	0.0-2.9	0.5-1.0	.24	.24	5	2	134
	15-19	25-75	5-45	10-25	1.30-1.50	4.00-14.00	0.12-0.17	0.0-2.9	0.0-0.5	.24	.24			
	19-37	25-75	5-45	18-35	1.30-1.50	4.00-14.00	0.12-0.17	0.0-2.9	0.0-0.5	.15	.15			
	37-70	50-99	0-25	2-30	1.40-1.70	4.00-141.00	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
W.														
Water														

Table 18.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
1A:				
Altavista------------	0-16	2.9-10	2.2-7.7	4.0-6.5
	16-40	6.3-13	4.7-10	4.0-6.0
	40-65	0.7-8.1	0.5-6.1	4.0-6.0
1B:				
Altavista------------	0-16	2.9-10	2.2-7.7	4.0-6.5
	16-40	6.3-13	4.7-10	4.0-6.0
	40-65	0.7-8.1	0.5-6.1	4.0-6.0
2A:				
Bama-----------------	0-13	2.9-7.8	2.2-5.8	4.5-6.5
	13-26	4.5-9.1	3.4-6.8	4.5-6.0
	26-70	5.0-9.9	3.8-7.4	4.5-5.5
2B:				
Bama-----------------	0-13	2.9-7.8	2.2-5.8	4.5-6.5
	13-26	4.5-9.1	3.4-6.8	4.5-6.0
	26-70	5.0-9.9	3.8-7.4	4.5-5.5
3A:				
Bibb-----------------	0-15	1.6-13	1.2-9.6	4.5-5.5
	15-42	3.1-9.0	2.3-6.8	4.5-5.5
	42-65	1.6-11	1.2-9.6	4.5-5.5
Kinston--------------	0-8	5.8-16	4.3-12	4.5-6.0
	8-43	4.5-13	3.4-9.9	4.5-5.5
	43-65	0.5-9.8	0.4-7.3	4.5-5.5
4A:				
Bohicket-------------	0-8	22-77	16-58	6.1-8.4
	8-29	24-66	18-50	6.1-8.4
	29-65	12-66	9.0-50	6.1-8.4
5A:				
Bojac----------------	0-6	1.9-4.2	1.4-3.2	4.0-6.5
	6-46	2.8-5.1	2.1-3.8	4.0-6.5
	46-65	0.2-2.6	0.2-2.0	4.0-6.5
6A:				
Bojac----------------	0-12	1.9-6.5	1.4-4.9	4.0-6.5
	12-46	0.8-5.1	2.1-3.8	4.0-6.5
	46-65	0.2-2.5	0.2-1.8	4.0-6.5
6B:				
Bojac----------------	0-12	1.9-6.5	1.4-4.9	4.0-6.5
	12-46	0.8-5.1	2.1-3.8	4.0-6.5
	46-65	0.2-2.5	0.2-1.8	4.0-6.5
7A:				
Catpoint-------------	0-5	1.1-3.5	0.8-2.6	4.5-6.5
	5-49	0.0-3.0	0.0-2.2	4.5-6.5
	49-72	0.0-3.0	0.0-2.2	4.5-6.5

Table 18.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
8A:				
Conetoe	0-29	1.6-7.0	1.2-5.2	4.5-6.5
	29-52	2.5-6.6	1.9-5.0	4.5-6.5
	52-80	0.5-3.0	0.4-2.2	4.5-6.5
9A:				
Daleville	0-5	3.6-9.5	2.7-7.1	4.5-5.5
	5-65	5.0-9.9	3.8-7.4	4.5-5.5
10A:				
Emporia	0-16	2.9-9.0	2.2-6.8	4.5-6.5
	16-28	4.5-9.9	3.4-7.4	4.5-6.0
	28-55	3.8-12	2.8-9.3	4.5-6.0
	55-80	1.2-12	0.9-9.3	4.5-6.0
10B:				
Emporia	0-16	2.9-9.0	2.2-6.8	4.5-6.5
	16-28	4.5-9.9	3.4-7.4	4.5-6.0
	28-55	3.8-12	2.8-9.3	4.5-6.0
	55-80	1.2-12	0.9-9.3	4.5-6.0
11A:				
Eulonia	0-7	2.4-9.5	1.8-7.1	4.5-6.0
	7-31	8.8-15	6.6-11	4.5-6.0
	31-45	5.0-12	3.8-9.3	4.5-6.0
	45-75	0.8-12	0.6-8.9	4.5-6.0
11B:				
Eulonia	0-7	2.4-9.5	1.8-7.1	4.5-6.0
	7-31	8.8-15	6.6-11	4.5-6.0
	31-45	5.0-12	3.8-9.3	4.5-6.0
	45-75	0.8-12	0.6-8.9	4.5-6.0
12A:				
Eunola	0-10	3.6-9.5	2.7-7.1	4.5-5.5
	10-55	5.0-11	3.7-8.2	4.5-5.5
	55-65	0.5-7.4	0.4-5.5	4.5-5.5
12B:				
Eunola	0-10	3.6-9.5	2.7-7.1	4.5-5.5
	10-55	5.0-11	3.7-8.2	4.5-5.5
	55-65	0.5-7.4	0.4-5.5	4.5-5.5
13A:				
Kempsville	0-18	2.4-8.2	1.8-6.2	4.5-6.0
	18-44	3.0-9.9	2.2-7.4	4.5-6.0
	44-80	4.5-9.3	3.4-7.0	4.5-6.0
13B:				
Kempsville	0-18	2.4-8.2	1.8-6.2	4.5-6.0
	18-44	3.0-9.9	2.2-7.4	4.5-6.0
	44-80	4.5-9.3	3.4-7.0	4.5-6.0
14A:				
Kenansville	0-9	1.6-7.0	1.2-5.2	4.5-6.0
	9-34	0.5-3.6	0.4-2.7	4.5-6.0
	34-45	1.2-6.0	0.9-4.5	4.5-6.0
	45-70	0.2-3.0	0.2-2.2	4.5-6.0

Table 18.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
15A:				
Lanexa	0-26	34-67	26-50	4.0-6.5
	26-48	45-150	34-112	4.0-6.5
	48-80	39-70	29-53	4.0-6.5
16A:				
Mattan	0-14	31-57	23-43	4.0-6.0
	14-40	46-139	34-104	4.0-6.0
	40-80	9.0-35	6.0-26	4.0-6.0
17A:				
Munden	0-13	2.2-5.8	1.6-4.3	4.5-6.5
	13-44	2.8-6.8	2.1-5.1	4.5-6.0
	44-60	0.7-4.7	0.5-3.5	4.5-6.0
18A:				
Myatt	0-7	3.1-15	2.3-11	4.5-6.0
	7-17	2.6-11	1.9-8.1	4.5-6.0
	17-40	4.5-11	3.4-8.2	4.0-5.5
	40-65	0.5-8.6	0.4-6.5	4.0-5.5
19A:				
Nansemond	0-16	2.1-4.8	1.6-3.6	4.0-6.5
	16-42	2.5-5.0	1.9-3.7	4.0-6.0
	42-60	0.5-3.5	0.4-2.6	4.0-6.0
20A:				
Osier	0-7	2.8-14	2.1-10	4.0-6.0
	7-30	0.5-3.6	0.4-2.7	4.0-6.0
	30-60	0.5-3.6	0.4-2.7	4.0-6.0
21A:				
Pactolus	0-11	1.8-8.7	1.4-6.5	4.0-6.0
	11-33	0.7-4.7	0.5-3.5	4.0-5.5
	33-60	0.7-4.7	0.5-3.5	4.0-5.5
22D:				
Remlik	0-22	1.1-4.8	0.8-3.6	4.0-6.0
	22-38	2.0-8.6	1.5-6.5	4.0-6.0
	38-70	1.0-5.5	0.8-4.1	4.0-6.0
Nevarc	0-6	3.1-9.0	2.3-6.8	4.0-6.0
	6-40	8.0-15	6.0-11	4.0-6.0
	40-60	0.5-14	0.4-10	4.0-6.0
22F:				
Remlik	0-22	1.1-4.8	0.8-3.6	4.0-6.0
	22-38	2.0-8.6	1.5-6.5	4.0-6.0
	38-70	1.0-5.5	0.8-4.1	4.0-6.0
Nevarc	0-6	3.1-9.0	2.3-6.8	4.0-6.0
	6-40	8.0-15	6.0-11	4.0-6.0
	40-60	0.5-14	0.4-10	4.0-6.0
23A:				
Riverview	0-12	1.9-7.0	1.4-5.2	4.5-6.5
	12-50	5.6-11	4.2-8.2	4.5-6.0
	50-65	0.7-7.9	0.5-5.9	4.5-6.0

Table 18.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
24A:				
Roanoke--------------	0-12	3.6-11	2.7-8.4	4.0-5.5
	12-23	5.0-14	3.8-10	4.0-5.5
	23-46	8.8-16	6.6-12	4.0-5.5
	46-65	1.2-13	0.9-9.8	4.0-6.5
25A:				
Seabrook-------------	0-4	1.6-7.5	1.2-5.6	4.0-6.5
	4-41	0.5-4.1	0.4-3.1	4.0-6.5
	41-72	0.5-3.6	0.4-2.7	4.0-6.5
26A:				
Slagle---------------	0-14	3.6-11	2.7-8.4	4.0-5.5
	14-48	4.5-9.9	3.4-7.4	4.0-5.5
	48-62	4.5-11	3.4-7.9	4.0-5.5
26B:				
Slagle---------------	0-14	3.6-11	2.7-8.4	4.0-5.5
	14-48	4.5-9.9	3.4-7.4	4.0-5.5
	48-62	4.5-11	3.4-7.9	4.0-5.5
27A:				
State----------------	0-10	1.8-7.5	1.4-5.6	4.0-6.5
	10-50	6.3-13	4.7-9.8	4.0-5.5
	50-65	0.7-5.8	0.5-4.4	4.0-6.5
27B:				
State----------------	0-10	1.8-7.5	1.4-5.6	4.0-6.5
	10-50	6.3-13	4.7-9.8	4.0-5.5
	50-65	0.7-5.8	0.5-4.4	4.0-6.5
28A:				
Suffolk--------------	0-10	2.1-4.8	1.6-3.6	4.0-6.0
	10-38	2.5-9.4	1.9-7.0	4.0-6.0
	38-65	1.0-3.0	0.8-2.2	4.0-6.0
Rumford--------------	0-7	2.6-8.2	2.0-6.2	4.0-6.5
	7-30	2.0-7.4	1.5-5.5	4.0-6.0
	30-37	1.2-5.6	0.9-4.2	4.0-6.0
	37-65	0.5-4.2	0.4-3.2	4.0-6.5
28B:				
Suffolk--------------	0-10	2.1-4.8	1.6-3.6	4.0-6.0
	10-38	2.5-9.4	1.9-7.0	4.0-6.0
	38-65	1.0-3.0	0.8-2.2	4.0-6.0
Rumford--------------	0-7	2.6-8.2	2.0-6.2	4.0-6.5
	7-30	2.0-7.4	1.5-5.5	4.0-6.0
	30-37	1.2-5.6	0.9-4.2	4.0-6.0
	37-65	0.5-4.2	0.4-3.2	4.0-6.5
29B:				
Tarboro--------------	0-9	2.2-6.5	1.6-4.8	4.5-6.5
	9-80	0.7-2.9	0.5-2.2	4.5-6.5
29D:				
Tarboro--------------	0-9	2.2-6.5	1.6-4.8	4.5-6.5
	9-80	0.7-2.9	0.5-2.2	4.5-6.5

Table 18.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
29F:				
Tarboro--------------	0-9	2.2-6.5	1.6-4.8	4.5-6.5
	9-80	0.7-2.9	0.5-2.2	4.5-6.5
30A:				
Tomotley-------------	0-17	4.0-20	3.0-15	4.0-5.5
	17-52	7.4-14	5.6-11	4.0-5.5
	52-65	1.0-17	0.8-13	4.0-6.0
31B.				
Udorthents				
32A:				
Wehadkee-------------	0-10	6.2-18	4.7-14	4.5-6.5
	10-44	5.2-14	3.9-11	4.5-6.5
	44-70	0.7-14	0.5-11	4.5-6.5
33A:				
Wickham--------------	0-15	2.5-5.8	1.9-4.3	4.5-6.0
	15-19	3.5-9.9	2.6-7.4	4.5-6.0
	19-37	6.3-13	4.7-10	4.5-6.0
	37-70	0.7-11	0.5-8.3	4.5-6.0
33B:				
Wickham--------------	0-15	2.5-5.8	1.9-4.3	4.5-6.0
	15-19	3.5-9.9	2.6-7.4	4.5-6.0
	19-37	6.3-13	4.7-10	4.5-6.0
	37-70	0.7-11	0.5-8.3	4.5-6.0
W.				
Water				

Table 19.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
1A:										
Altavista-----------	C	Low	Jan-April	1.5-2.5	>6.0	---	---	None	---	Rare
			May-Nov	---	---	---	---	None	---	None
			December	1.5-2.5	>6.0	---	---	None	---	Rare
1B:										
Altavista-----------	C	Low	Jan-April	1.5-2.5	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-2.5	>6.0	---	---	None	---	None
2A:										
Bama----------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
2B:										
Bama----------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
3A:										
Bibb----------------	D	Very high	Jan-June	0.5-1.0	>6.0	---	---	None	Long	Frequent
			July-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.5-1.0	>6.0	---	---	None	Long	Frequent
Kinston-------------	B/D	Very high	Jan-June	0.0-1.0	>6.0	---	---	None	Long	Frequent
			July-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	Long	Frequent
4A:										
Bohicket------------	D	Negligible	Jan-Dec	0.0	>6.0	0.0-3.0	Very brief	Frequent	Very brief	Very frequent
5A:										
Bojac---------------	B	Very low	Jan-April	4.0-6.6	>6.0	---	---	None	---	Rare
			May-Oct	---	---	---	---	None	---	Rare
			Nov-Dec	4.0-6.6	>6.0	---	---	None	---	Rare
6A:										
Bojac---------------	B	Very low	Jan-April	4.0-6.6	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	4.0-6.6	>6.0	---	---	None	---	None

Table 19.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
6B:										
Bojac---------------	B	Very low	Jan-April	4.0-6.6	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	4.0-6.6	>6.0	---	---	None	---	None
7A:										
Catpoint------------	A	Very low	January	---	---	---	---	None	---	None
			Feb-April	4.0-6.6	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
8A:										
Conetoe-------------	A	Very low	Jan-Dec	---	---	---	---	None	---	None
9A:										
Daleville-----------	D	Very high	Jan-May	0.0-1.0	>6.0	---	---	None	---	None
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None
10A:										
Emporia-------------	C	Low	Jan-April	3.0-4.5	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	3.0-4.5	>6.0	---	---	None	---	None
10B:										
Emporia-------------	C	Low	Jan-April	3.0-4.5	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	3.0-4.5	>6.0	---	---	None	---	None
11A:										
Eulonia-------------	C	Low	Jan-May	1.5-3.5	>6.0	---	---	None	---	None
			June-Nov	---	---	---	---	None	---	None
			December	1.5-3.5	>6.0	---	---	None	---	None
11B:										
Eulonia-------------	C	Low	Jan-May	1.5-3.5	>6.0	---	---	None	---	None
			June-Nov	---	---	---	---	None	---	None
			December	1.5-3.5	>6.0	---	---	None	---	None
12A:										
Eunola--------------	C	Low	Jan-March	1.5-2.5	>6.0	---	---	None	---	None
			April-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None
12B:										
Eunola--------------	C	Low	Jan-March	1.5-2.5	>6.0	---	---	None	---	None
			April-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None

Table 19.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
13A:										
Kempsville	B	Low	Jan-Dec	---	---	---	---	None	---	None
13B:										
Kempsville	B	Low	Jan-Dec	---	---	---	---	None	---	None
14A:										
Kenansville	A	Very low	Jan-Dec	---	---	---	---	None	---	None
15A:										
Lanexa	D	Negligible	Jan-Dec	0.0	>6.0	0.0-2.0	Brief	Frequent	Very long	Very frequent
16A:										
Mattan	D	Negligible	Jan-Dec	0.0	>6.0	0.0-2.0	Very long	Frequent	Very long	Very frequent
17A:										
Munden	B	Very low	Jan-April	1.5-2.5	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	>6.0	---	---	None	---	None
18A:										
Myatt	D	Very high	Jan-April	0.0-1.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None
19A:										
Nansemond	C	Very low	Jan-April	1.5-2.5	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-2.5	>6.0	---	---	None	---	None
20A:										
Osier	A/D	Very high	Jan-March	0.0-0.5	>6.0	---	---	None	---	Rare
			April-Oct	---	---	---	---	None	---	Rare
			Nov-Dec	0.0-0.5	>6.0	---	---	None	---	Rare
21A:										
Pactolus	A	Very low	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-3.0	>6.0	---	---	None	---	None
22D:										
Remlik	A	Medium	Jan-March	4.0-6.0	>6.0	---	---	None	---	None
			April-Nov	---	---	---	---	None	---	None
			December	4.0-6.0	>6.0	---	---	None	---	None

Table 19.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
22D:										
Nevarc--------------	C	Medium	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-3.0	>6.0	---	---	None	---	None
22F:										
Remlik--------------	A	High	Jan-March	4.0-6.0	>6.0	---	---	None	---	None
			April-Nov	---	---	---	---	None	---	None
			December	4.0-6.0	>6.0	---	---	None	---	None
Nevarc--------------	C	High	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			December	1.5-3.0	>6.0	---	---	None	---	None
23A:										
Riverview-----------	B	Low	Jan-March	3.0-5.0	>6.0	---	---	None	Brief	Frequent
			April-Nov	---	---	---	---	None	---	None
			December	3.0-5.0	>6.0	---	---	None	Brief	Frequent
24A:										
Roanoke-------------	D	Very high	Jan-May	0.0-1.0	>6.0	---	---	None	---	None
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None
25A:										
Seabrook------------	C	Very low	Jan-March	2.0-4.0	>6.0	---	---	None	---	None
			April-Nov	---	---	---	---	None	---	None
			December	2.0-4.0	>6.0	---	---	None	---	None
26A:										
Slagle--------------	C	Low	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-3.0	>6.0	---	---	None	---	None
26B:										
Slagle--------------	C	Low	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-3.0	>6.0	---	---	None	---	None
27A:										
State---------------	B	Low	Jan-June	4.0-6.6	>6.0	---	---	None	---	None
			July-Nov	---	---	---	---	None	---	None
			December	4.0-6.6	>6.0	---	---	None	---	None

Table 19.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
27B:										
State	B	Low	Jan-June	4.0-6.6	>6.0	---	---	None	---	None
			July-Nov	---	---	---	---	None	---	None
			December	4.0-6.6	>6.0	---	---	None	---	None
28A:										
Suffolk	B	Low	Jan-Dec	---	---	---	---	None	---	None
Rumford	B	Very low	Jan-Dec	---	---	---	---	None	---	None
28B:										
Suffolk	B	Low	Jan-Dec	---	---	---	---	None	---	None
Rumford	B	Very low	Jan-Dec	---	---	---	---	None	---	None
29B:										
Tarboro	A	Very low	Jan-Dec	---	---	---	---	None	---	None
29D:										
Tarboro	A	Low	Jan-Dec	---	---	---	---	None	---	None
29F:										
Tarboro	A	Medium	Jan-Dec	---	---	---	---	None	---	None
30A:										
Tomotley	B/D	Very high	Jan-April	0.0-1.0	>6.0	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	---	None
31B.										
Udorthents										
32A:										
Wehadkee	D	Very high	Jan-May	0.0-1.0	>6.0	---	---	None	Long	Frequent
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	0.0-1.0	>6.0	---	---	None	Long	Frequent
33A:										
Wickham	B	Low	Jan-Dec	---	---	---	---	None	---	None
33B:										
Wickham	B	Low	Jan-Dec	---	---	---	---	None	---	None
W.										
Water										

Table 20.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Risk of corrosion	
	Uncoated steel	Concrete
1A:		
Altavista	Moderate	Moderate
1B:		
Altavista	Moderate	Moderate
2A:		
Bama	Low	Moderate
2B:		
Bama	Low	Moderate
3A:		
Bibb	High	Moderate
Kinston	High	High
4A:		
Bohicket	High	High
5A:		
Bojac	Low	High
6A:		
Bojac	Low	High
6B:		
Bojac	Low	High
7A:		
Catpoint	Low	Moderate
8A:		
Conetoe	Low	High
9A:		
Daleville	High	High
10A:		
Emporia	Moderate	High
10B:		
Emporia	Moderate	High
11A:		
Eulonia	Moderate	High
11B:		
Eulonia	Moderate	High
12A:		
Eunola	Low	High
12B:		
Eunola	Low	High

Table 20.—Soil Features—Continued

Map symbol and soil name	Risk of corrosion	
	Uncoated steel	Concrete
13A:		
Kempsville	Low	Moderate
13B:		
Kempsville	Low	Moderate
14A:		
Kenansville	Low	High
15A:		
Lanexa	High	High
16A:		
Mattan	High	High
17A:		
Munden	Low	High
18A:		
Myatt	High	High
19A:		
Nansemond	Moderate	High
20A:		
Osier	High	High
21A:		
Pactolus	Low	High
22D:		
Remlik	Low	Moderate
Nevarc	High	High
22F:		
Remlik	Low	Moderate
Nevarc	High	High
23A:		
Riverview	Low	Moderate
24A:		
Roanoke	High	High
25A:		
Seabrook	Low	Moderate
26A:		
Slagle	Moderate	High
26B:		
Slagle	Moderate	High
27A:		
State	Moderate	High
27B:		
State	Moderate	High

Table 20.—Soil Features—Continued

Map symbol and soil name	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
28A:		
Suffolk	Moderate	High
Rumford	Low	High
28B:		
Suffolk	Moderate	High
Rumford	Low	High
29B:		
Tarboro	Low	Moderate
29D:		
Tarboro	Low	Moderate
29F:		
Tarboro	Low	Moderate
30A:		
Tomotley	High	High
31B.		
Udorthents		
32A:		
Wehadkee	High	Moderate
33A:		
Wickham	Moderate	High
33B:		
Wickham	Moderate	High
W.		
Water		

Table 21.—Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Altavista	Fine-loamy, mixed, semiactive, thermic Aquic Hapludults
Bama	Fine-loamy, siliceous, subactive, thermic Typic Paleudults
Bibb	Coarse-loamy, siliceous, active, acid, thermic Typic Fluvaquents
Bohicket	Fine, mixed, superactive, nonacid, thermic Typic Sulfaquents
Bojac	Coarse-loamy, mixed, semiactive, thermic Typic Hapludults
Catpoint	Thermic, coated Lamellic Quartzipsamments
Conetoe	Loamy, mixed, semiactive, thermic Arenic Hapludults
Daleville	Fine-loamy, siliceous, active, thermic Typic Paleaquults
*Emporia	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Eulonia	Fine, mixed, subactive, thermic Aquic Hapludults
Eunola	Fine-loamy, siliceous, semiactive, thermic Aquic Hapludults
*Kempsville	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Kenansville	Loamy, siliceous, subactive, thermic Arenic Hapludults
Kinston	Fine-loamy, siliceous, semiactive, acid, thermic Typic Fluvaquents
Lanexa	Clayey, mixed, euic, thermic Terric Haplosaprists
Mattan	Loamy, mixed, euic, thermic Terric Haplosaprists
Munden	Coarse-loamy, mixed, semiactive, thermic Aquic Hapludults
Myatt	Fine-loamy, siliceous, active, thermic Typic Endoaquults
Nansemond	Coarse-loamy, siliceous, subactive, thermic Aquic Hapludults
Nevarc	Fine, mixed, subactive, thermic Aquic Hapludults
Osier	Siliceous, thermic Typic Psammaquents
Pactolus	Thermic, coated Aquic Quartzipsamments
Remlik	Loamy, siliceous, subactive, thermic Arenic Hapludults
Riverview	Fine-loamy, mixed, active, thermic Fluventic Dystrudepts
Roanoke	Fine, mixed, semiactive, thermic Typic Endoaquults
Rumford	Coarse-loamy, siliceous, subactive, thermic Typic Hapludults
Seabrook	Mixed, thermic Aquic Udipsamments
Slagle	Fine-loamy, siliceous, subactive, thermic Aquic Hapludults
State	Fine-loamy, mixed, semiactive, thermic Typic Hapludults
Suffolk	Fine-loamy, siliceous, semiactive, thermic Typic Hapludults
Tarboro	Mixed, thermic Typic Udipsamments
Tomotley	Fine-loamy, mixed, semiactive, thermic Typic Endoaquults
Udorthents	Udorthents
*Wehadkee	Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts
Wickham	Fine-loamy, mixed, semiactive, thermic Typic Hapludults

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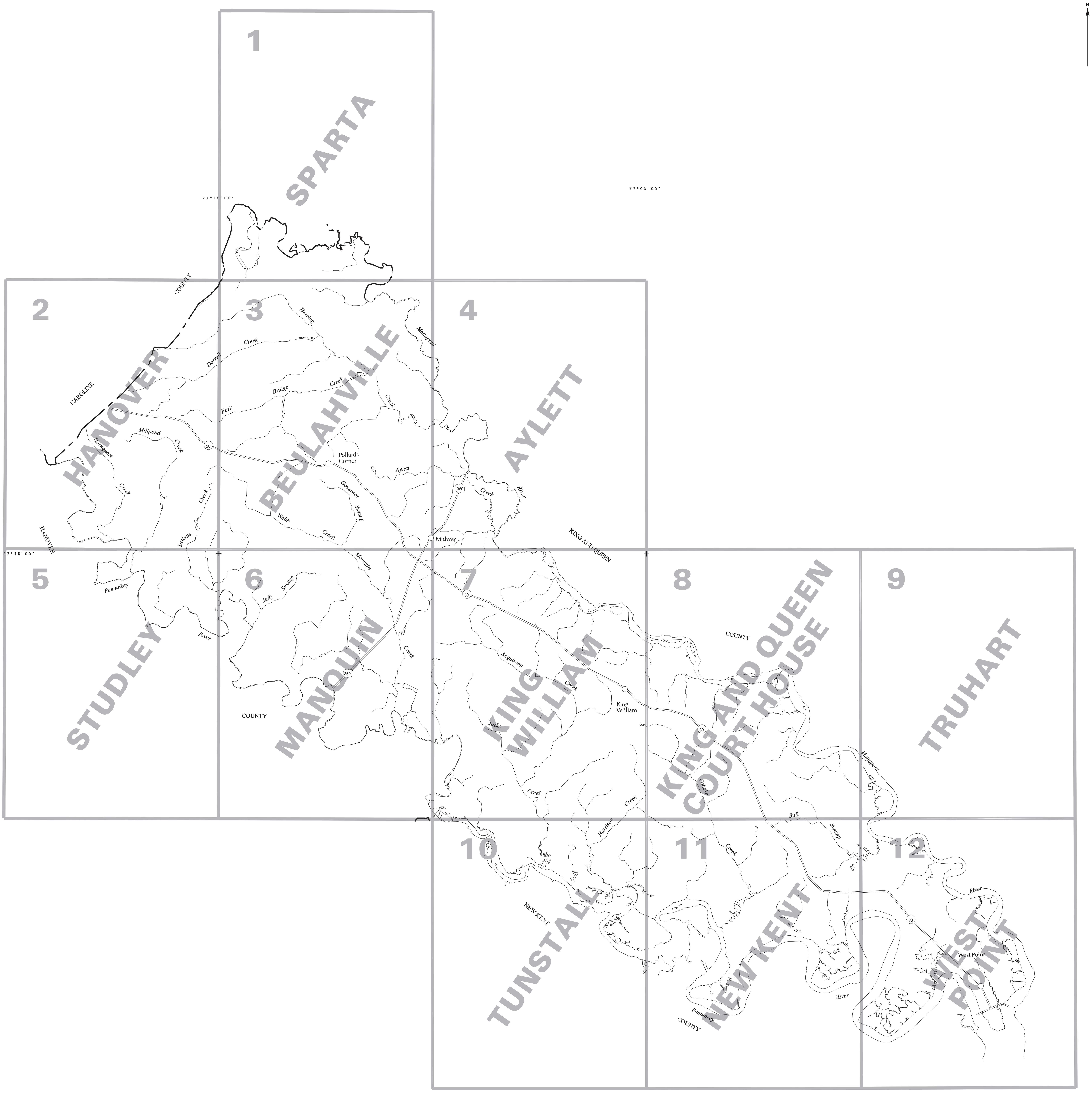
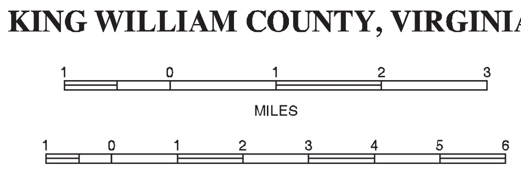


INDEX TO MAP SHEETS

KING WILLIAM COUNTY, VIRGINIA



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SOIL LEGEND

Map symbols consist of numbers or a combination of numbers and letters. The initial number represents the kind of soil. A capital letter following the initial number indicates the class of slope.

SYMBOL	NAME
1A	Altavista loamy sand, 0 to 2 percent slopes, rarely flooded
1B	Altavista fine sandy loam, 2 to 6 percent slopes
2A	Bama loam, 0 to 2 percent slopes
2B	Bama loam, 2 to 6 percent slopes
3A	Bibb and Kinston soils, 0 to 2 percent slopes, frequently flooded
4A	Bohicket silty clay loam, 0 to 1 percent slopes, very frequently flooded
5A	Bojac gravelly loamy sand, 0 to 2 percent slopes, rarely flooded
6A	Bojac fine sandy loam, 0 to 2 percent slopes
6B	Bojac fine sandy loam, 2 to 6 percent slopes
7A	Catpoint sand, 0 to 4 percent slopes
8A	Conetoe loamy fine sand, 0 to 4 percent slopes
9A	Daleville silt loam, 0 to 2 percent slopes
10A	Emporia fine sandy loam, 0 to 2 percent slopes
10B	Emporia fine sandy loam, 2 to 6 percent slopes
11A	Eulonia fine sandy loam, 0 to 2 percent slopes
11B	Eulonia fine sandy loam, 2 to 6 percent slopes
12A	Eunola sandy loam, 0 to 2 percent slopes
12B	Eunola sandy loam, 2 to 6 percent slopes
13A	Kempsville sandy loam, 0 to 2 percent slopes
13B	Kempsville sandy loam, 2 to 6 percent slopes
14A	Kenansville sand, 0 to 4 percent slopes
15A	Lanexa mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded
16A	Mattan mucky silty clay loam, 0 to 1 percent slopes, very frequently flooded
17A	Munden loamy sand, 0 to 2 percent slopes
18A	Myatt loam, 0 to 2 percent slopes
19A	Nansemond loamy fine sand, 0 to 2 percent slopes
20A	Osier loamy fine sand, 0 to 2 percent slopes, rarely flooded
21A	Pactolus loamy sand, 0 to 2 percent slopes
22D	Remlik and Nevarc soils, 6 to 15 percent slopes
22F	Remlik and Nevarc soils, 15 to 60 percent slopes
23A	Riverview loamy fine sand, 0 to 2 percent slopes, frequently flooded
24A	Roanoke silt loam, 0 to 2 percent slopes
25A	Seabrook loamy fine sand, 0 to 2 percent slopes
26A	Slagle loam, 0 to 2 percent slopes
26B	Slagle loam, 2 to 6 percent slopes
27A	State loamy fine sand, 0 to 2 percent slopes
27B	State loamy fine sand, 2 to 6 percent slopes
28A	Suffolk and Rumford soils, 0 to 2 percent slopes
28B	Suffolk and Rumford soils, 2 to 6 percent slopes
29B	Tarboro sand, 0 to 6 percent slopes
29D	Tarboro sand, 6 to 15 percent slopes
29F	Tarboro sand, 15 to 50 percent slopes
30A	Tomotley fine sandy loam, 0 to 2 percent slopes
31B	Udorthents, gently sloping
32A	Wehadkee loam, 0 to 2 percent slopes, frequently flooded
33A	Wickham loamy fine sand, 0 to 2 percent slopes
33B	Wickham loamy fine sand, 2 to 6 percent slopes
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

National, state, or province

County or parish

Reservation (national forest or park, state forest or park)

Limit of soil survey (label) and/or denied access area

Field sheet matchline & neatline

OTHER BOUNDARY (label)

Airport, airfield

Cemetery

TRANSPORTATION

Divided roads

Other roads

Trail

ROAD EMBLEM & DESIGNATIONS

Federal 287

State 52

DAMS

Medium or Small W

MISCELLANEOUS CULTURAL FEATURES

Church

School

HYDROGRAPHIC FEATURES

STREAMS

Perennial, double line

Unclassified stream

Drainage end
(Indicates direction of flow)

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS 1A 2A

LANDFORM FEATURES

Short steep slope

EXCAVATIONS

Gravel pit

MISCELLANEOUS SURFACE FEATURES

Clay spot

Sandy spot

Spoil area

Wet spot

Joins sheet 2, Hanover

Joins sheet 3, Beulahville

Joins sheet 4, Aylett

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 7.5 MAPS
2 HANOVER
3 BEULAHVILLE
4 AYLETT

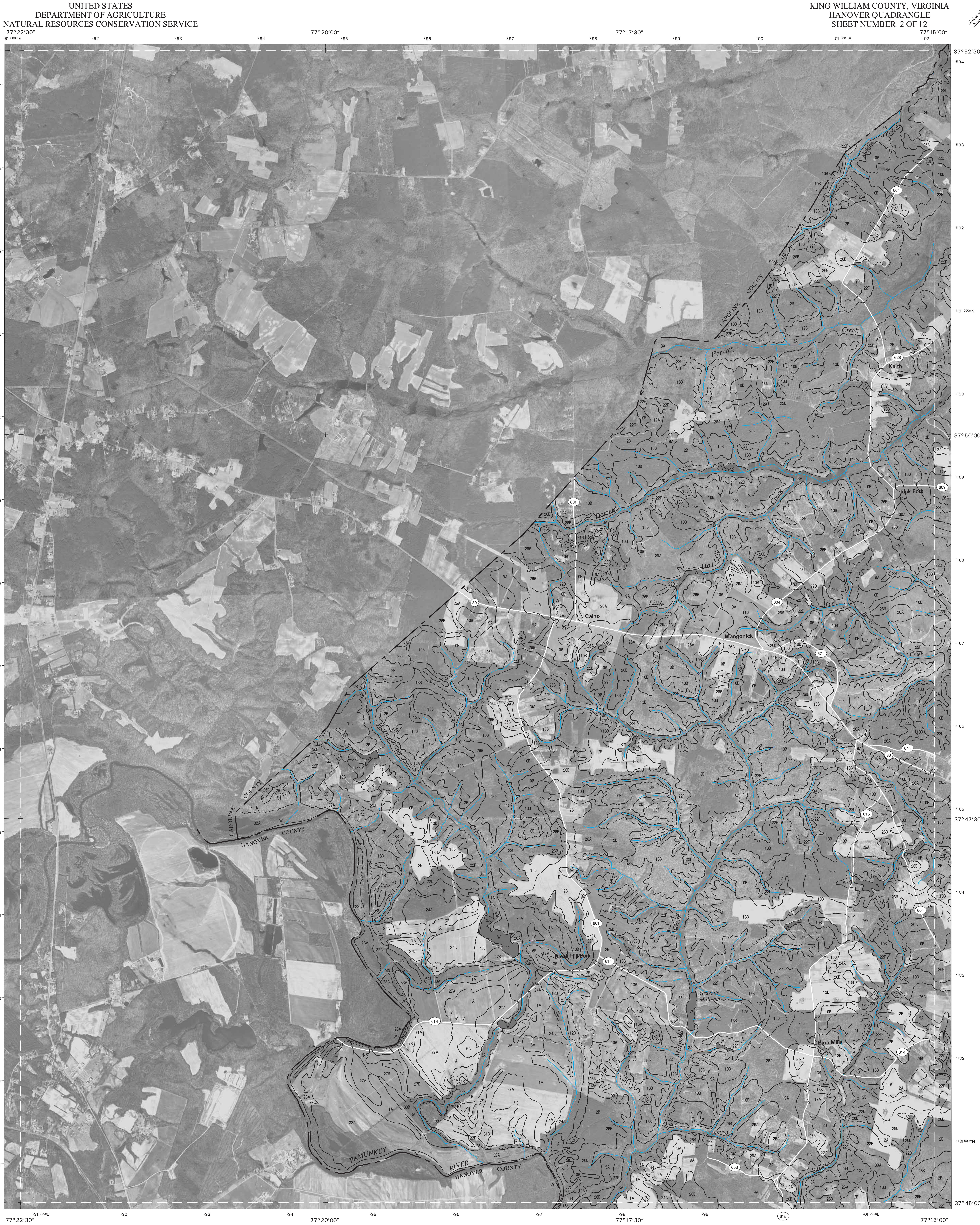
SPARTA, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 1 OF 12

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KING WILLIAM COUNTY, VIRGINIA
HANOVER QUADRANGLE
SHEET NUMBER 2 OF 12



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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

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1 SPARTA
3 BEULAHVILLE
5 STUDLEY
6 MANQUIN

HANOVER, VIRGINIA
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 12

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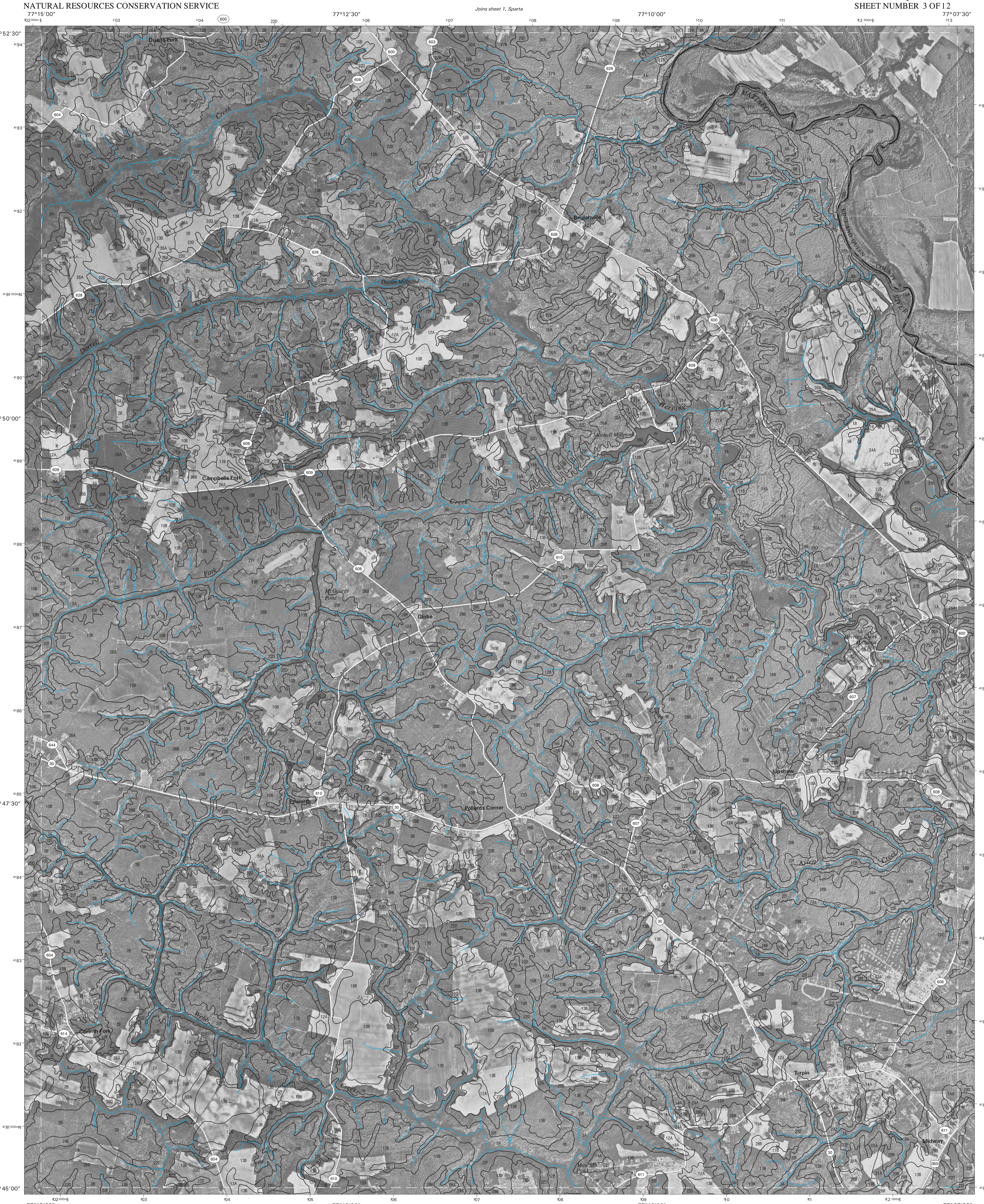
NATURAL RESOURCES CONSERVATION SERVICE

Joins sheet 1, Sparta



Joins sheet 2, Hanover
Joins sheet 4, Aylett
Joins sheet 5, Studley
Joins sheet 6, Manquin
Joins sheet 7, King William

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 — 0 — 1

FEET: 1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000

KILOMETERS: 1 — 0 — 1

	1	
2		4
5	6	7

1 SPARTA
2 HANOVER
4 AYLETT
5 STUDLEY
6 MANQUIN
7 KING WILLIAM

INDEX TO ADJOINING 7.5 MAPS

BEULAHVILLE, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 3 OF 12

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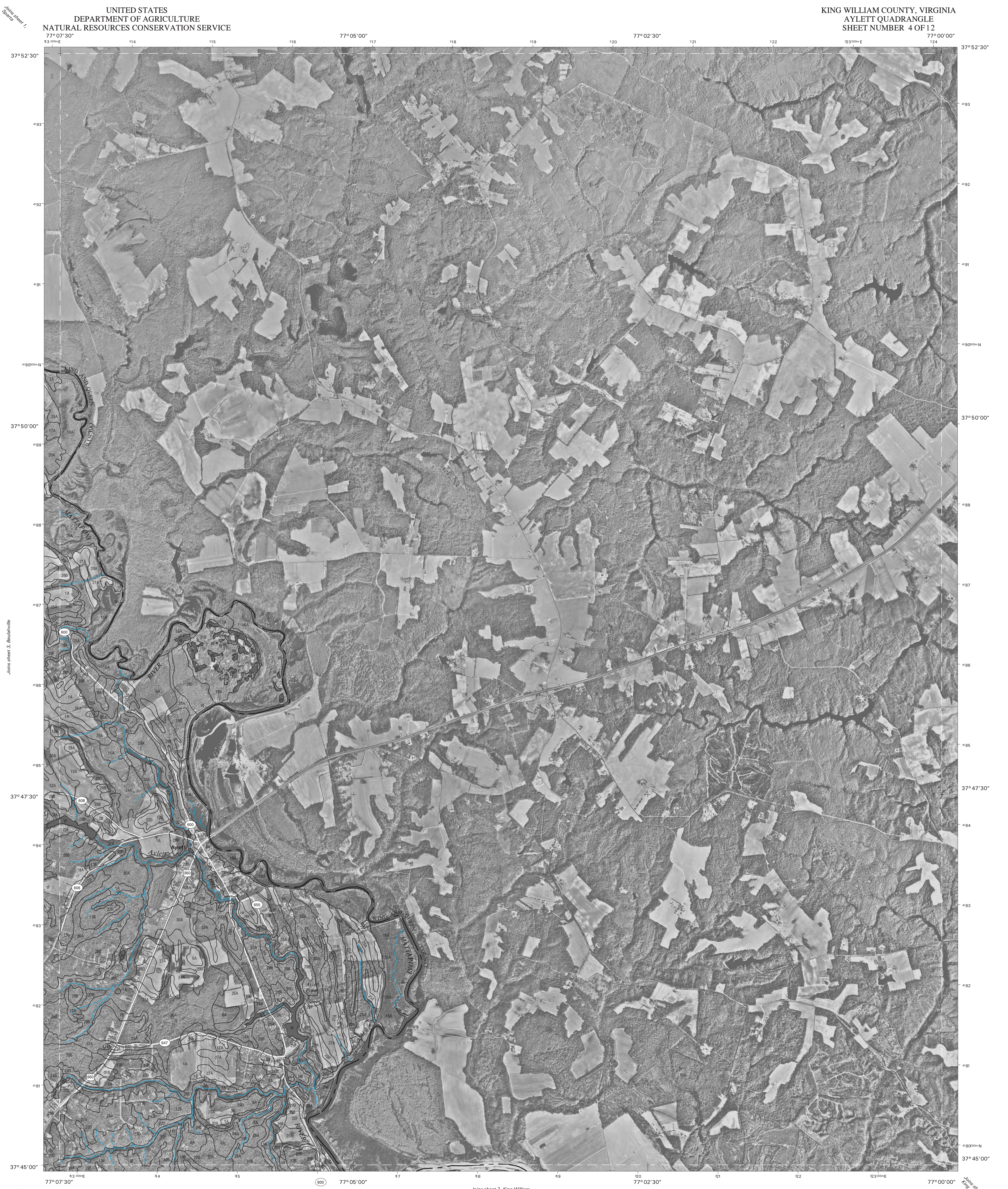
KING WILLIAM COUNTY, VIRGINIA
AYLETT QUADRANGLE
SHEET NUMBER 4 OF 12



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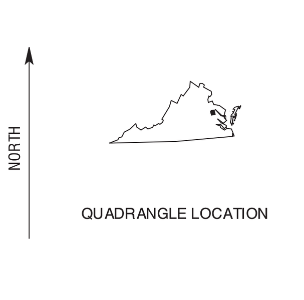

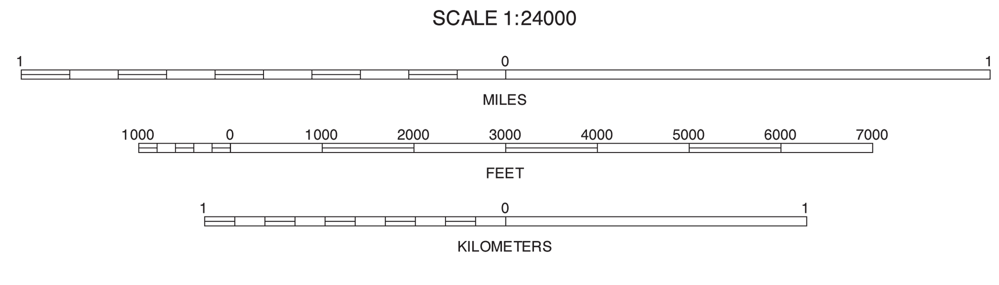

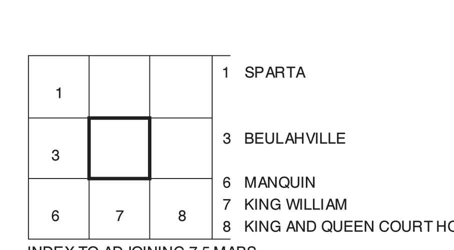

AYLETT, VIRGINIA
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 12

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 2, Hanover

Joins sheet 3, Beulahville

Joins sheet 6, Manquin

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

	2	3	
	■	6	

2 HANOVER
3 BEULAHVILLE
6 MANQUIN

INDEX TO ADJOINING 7.5 MAPS

STUDLEY, VIRGINIA
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 12

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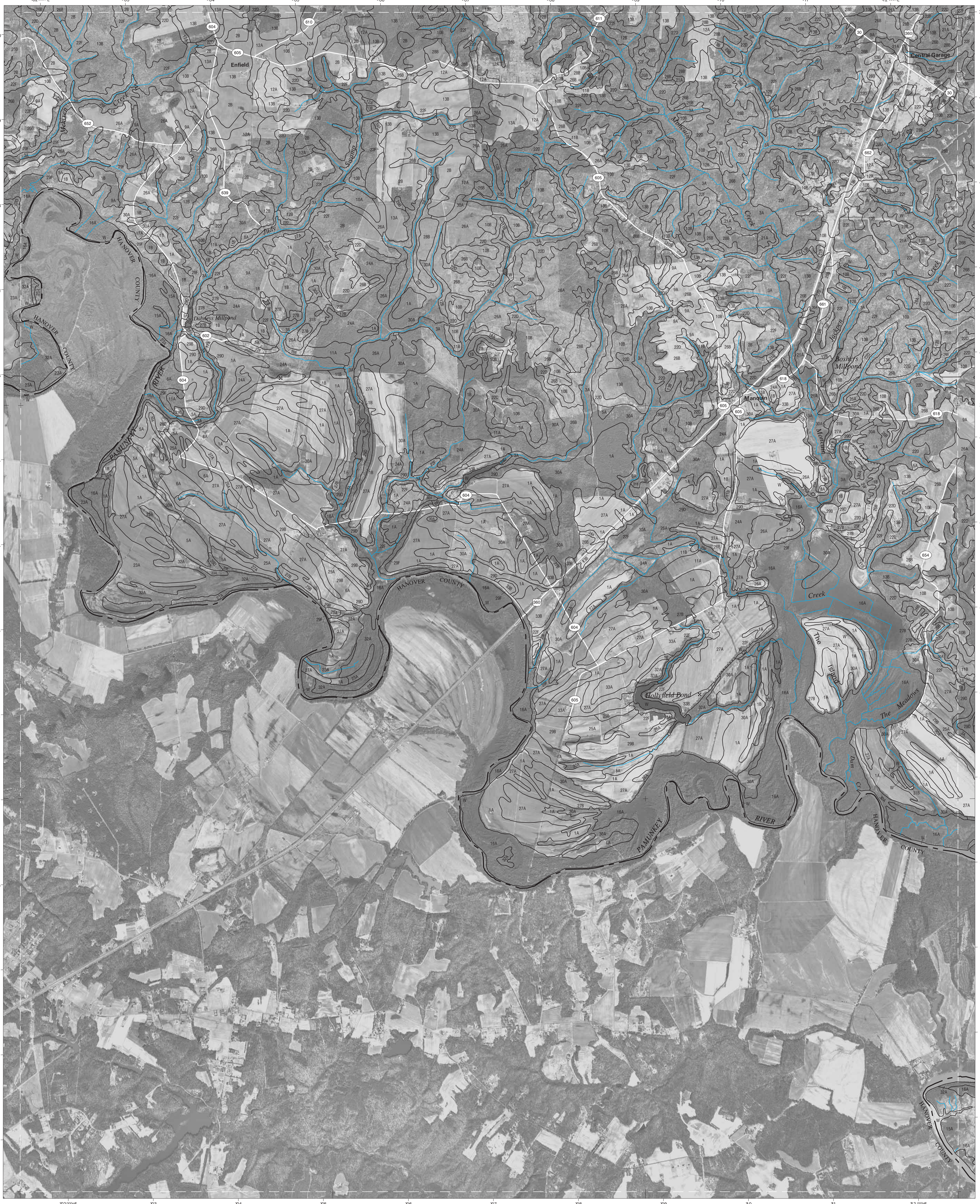
KING WILLIAM COUNTY, VIRGINIA
MANQUIN QUADRANGLE
SHEET NUMBER 6 OF 12



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1994-1995 aerial photography. Hydrography and culture information were acquired from Natural Resources Conservation Service. Hydrography and cultural layers were edited to conform with features represented on the publication orthophotography and to enhance the clarity of the soils information.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

2	3	4	2 HANOVER
5		7	3 BEULAHVILLE
		10	4 AYLETT
			5 STUDLEY
			7 KING WILLIAM
			10 TUNSTALL

INDEX TO ADJOINING 7.5 MAPS

MANQUIN, VIRGINIA

7.5 MINUTE SERIES
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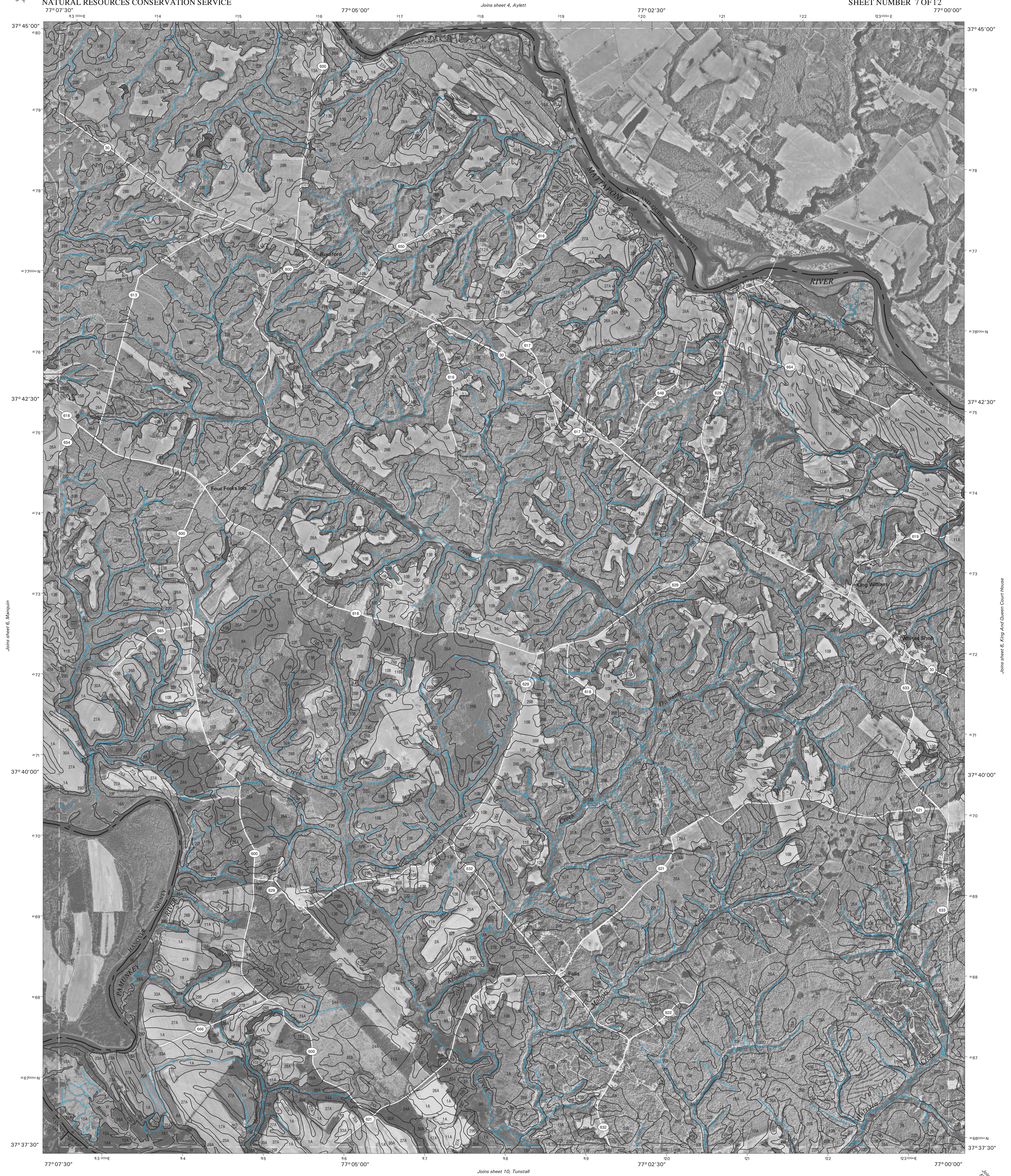
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KING WILLIAM COUNTY, VIRGINIA
KING WILLIAM QUADRANGLE
SHEET NUMBER 7 OF 12



Joins sheet 11, New Kent

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 18.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

3	4	
6		8
	10	11

3 BEULAHVILLE
4 AYLETT
6 MANQUIN
8 KING AND QUEEN COURT HOUSE
10 TUNSTALL
11 NEW KENT

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KING WILLIAM, VIRGINIA
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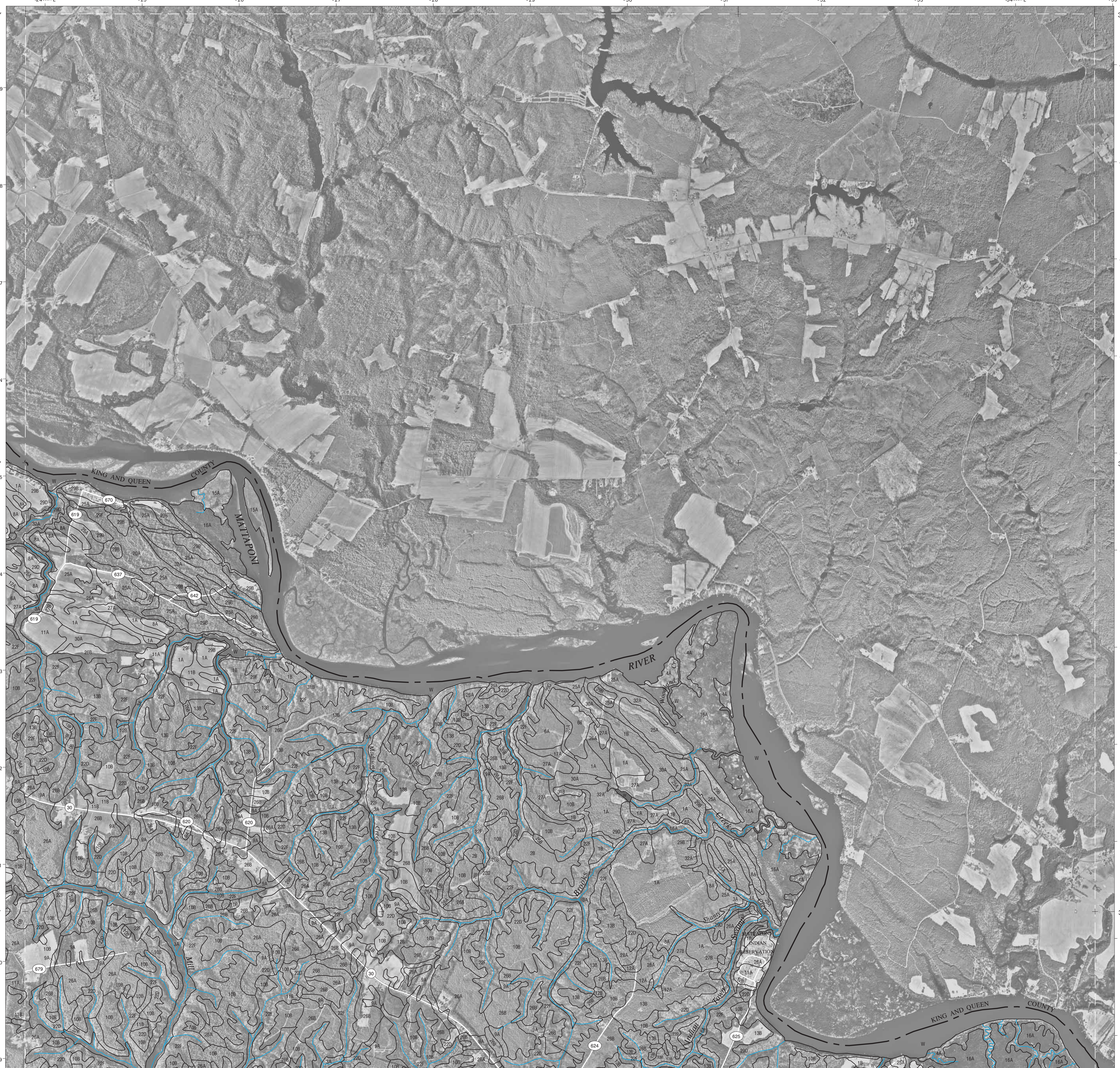
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 4, Aylett

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KING WILLIAM COUNTY, VIRGINIA
KING AND QUEEN COURT HOUSE QUADRANGLE
SHEET NUMBER 8 OF 12



Joins sheet 7, King William

Joins sheet 9, Truhart

Joins sheet 11, New Kent

Joins sheet 10, Tunstall

Joins sheet 12, West Point

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

4		
7		9
10	11	12

4 AYLETT
7 KING WILLIAM
9 TRUHART
10 TUNSTALL
11 NEW KENT
12 WEST POINT

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KING AND QUEEN COURT HOUSE, VIRGINIA
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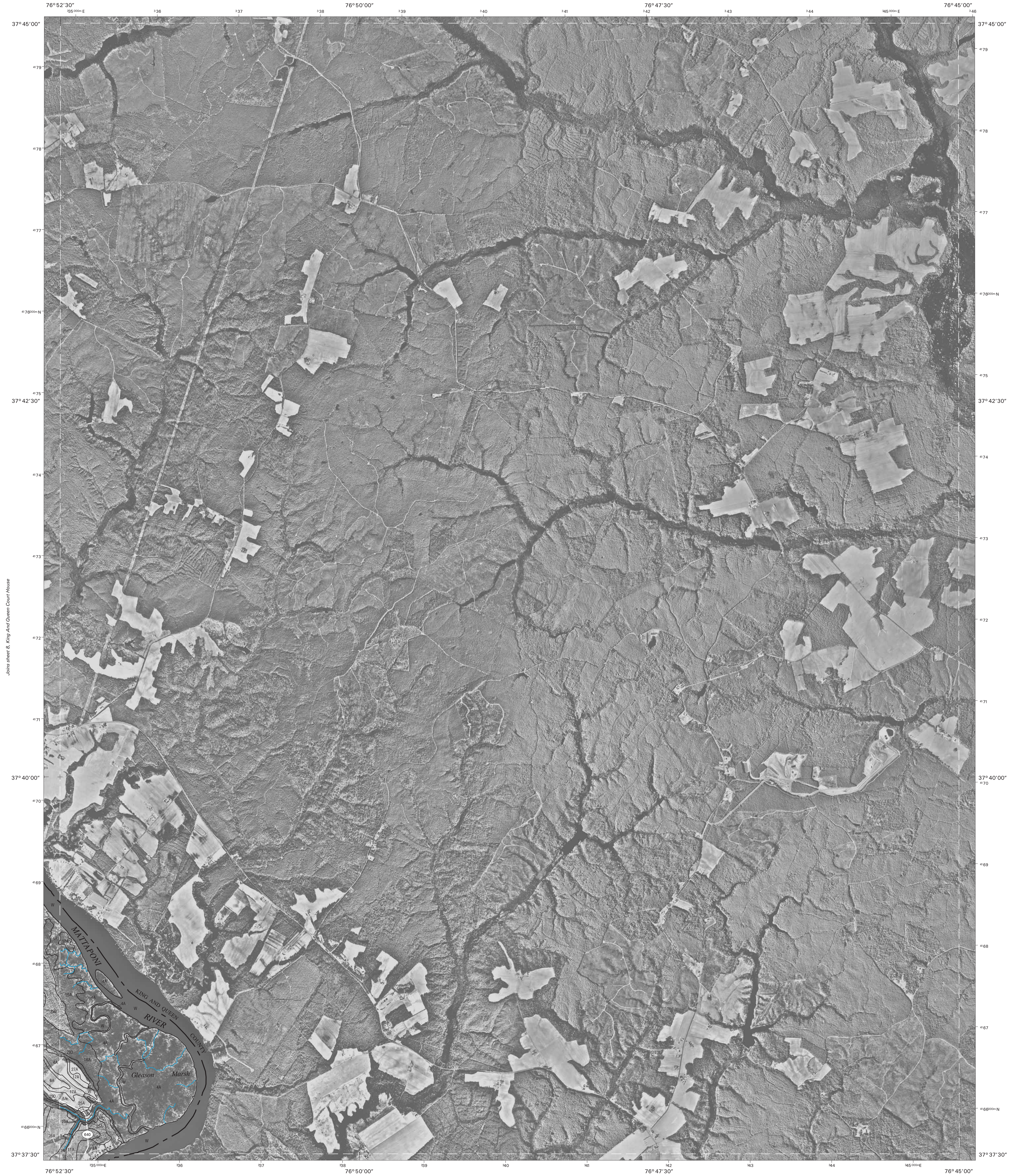
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE



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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

8	■	
11	12	

8 KING AND QUEEN COURT HOUSE
11 NEW KENT
12 WEST POINT

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TRUHART, VIRGINIA

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Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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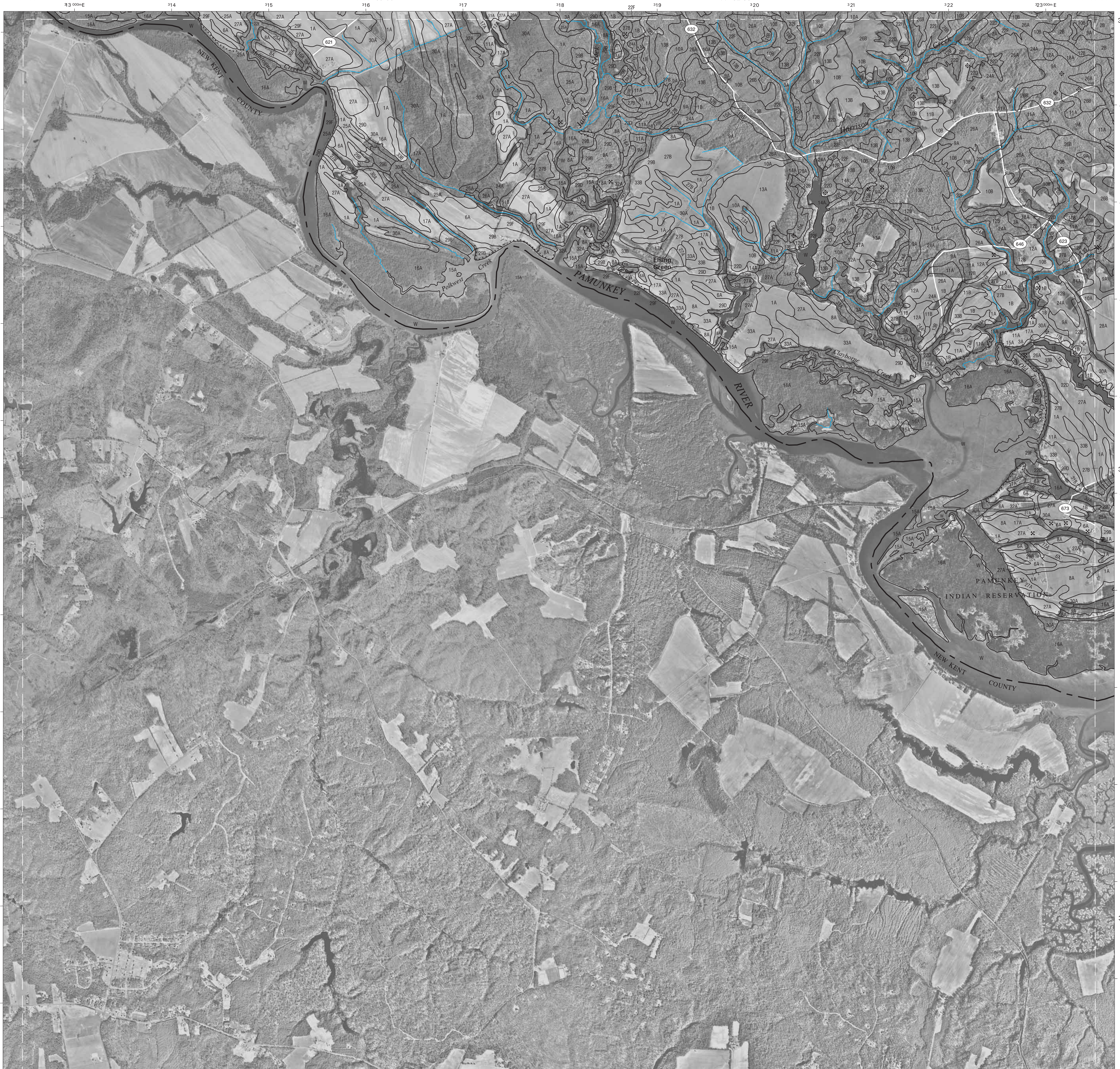
KING WILLIAM COUNTY, VIRGINIA
TUNSTALL QUADRANGLE
SHEET NUMBER 10 OF 12

Joins sheet 6, Manquin

Joins sheet 7, King William

Joins sheet 8, King And Queen Court House



Joins sheet 11, New Kent

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 18. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

6	7	8
	■	
	11	

6 MANQUIN
7 KING WILLIAM
8 KING AND QUEEN COURT HOUSE
11 NEW KENT

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TUNSTALL, VIRGINIA
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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KING WILLIAM COUNTY, VIRGINIA
NEW KENT QUADRANGLE
SHEET NUMBER 11 OF 12

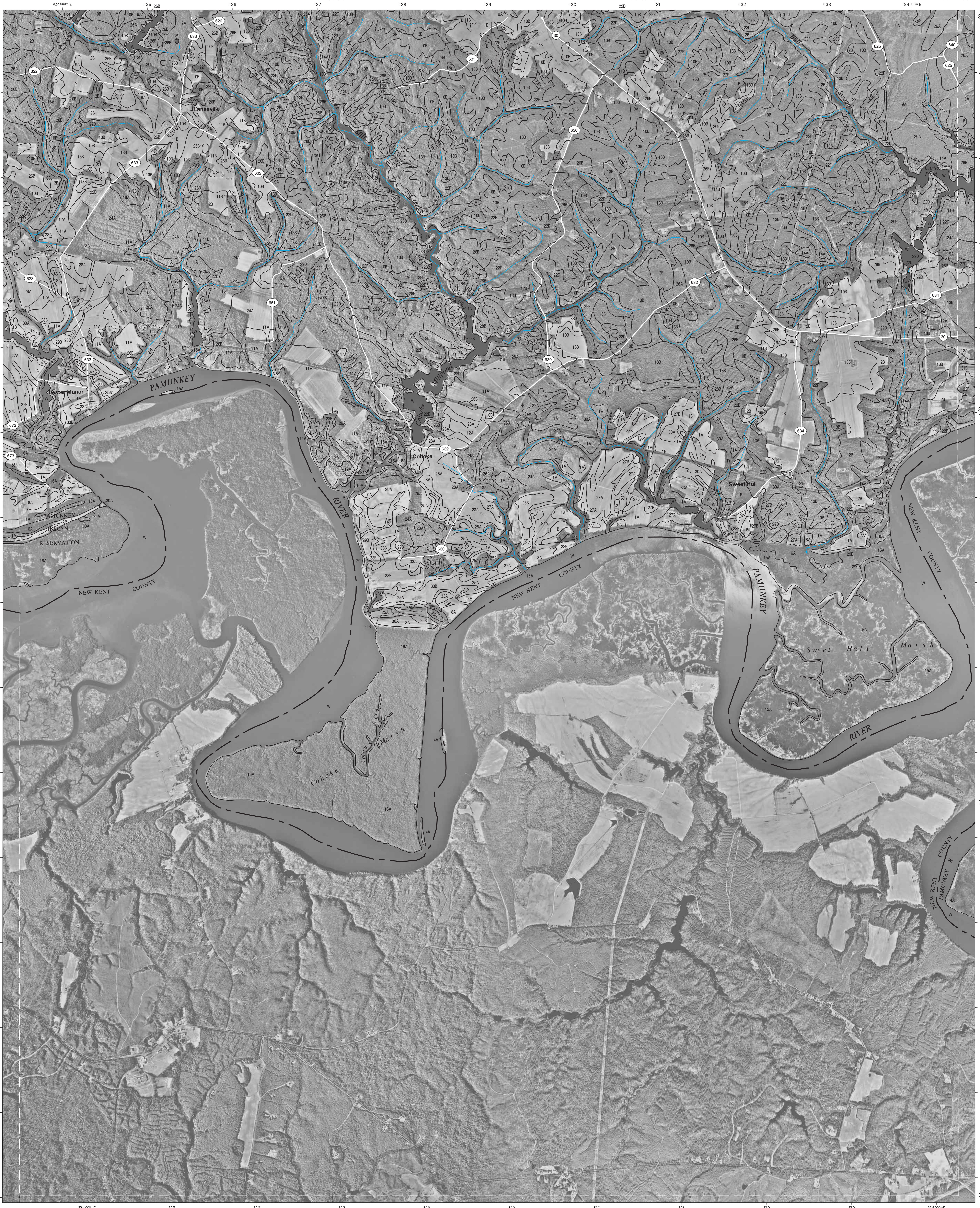
Joins sheet 7, King William

Joins sheet 8, King And Queen Court House

Joins sheet 9, Truhart

77° 00'00" — 76° 57'30" — 76° 55'00" — 76° 52'30"

37° 37'30"



Joins sheet 10, Tunstall

Joins sheet 12, West Point

37° 35'00"

37° 32'30"

37° 30'00"

77° 00'00" — 76° 57'30" — 76° 55'00" — 76° 52'30"

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

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7 KING WILLIAM
8 KING AND QUEEN COURT HOUSE
9 TRUHART
10 TUNSTALL
12 WEST POINT

NEW KENT, VIRGINIA
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UNITED STATES
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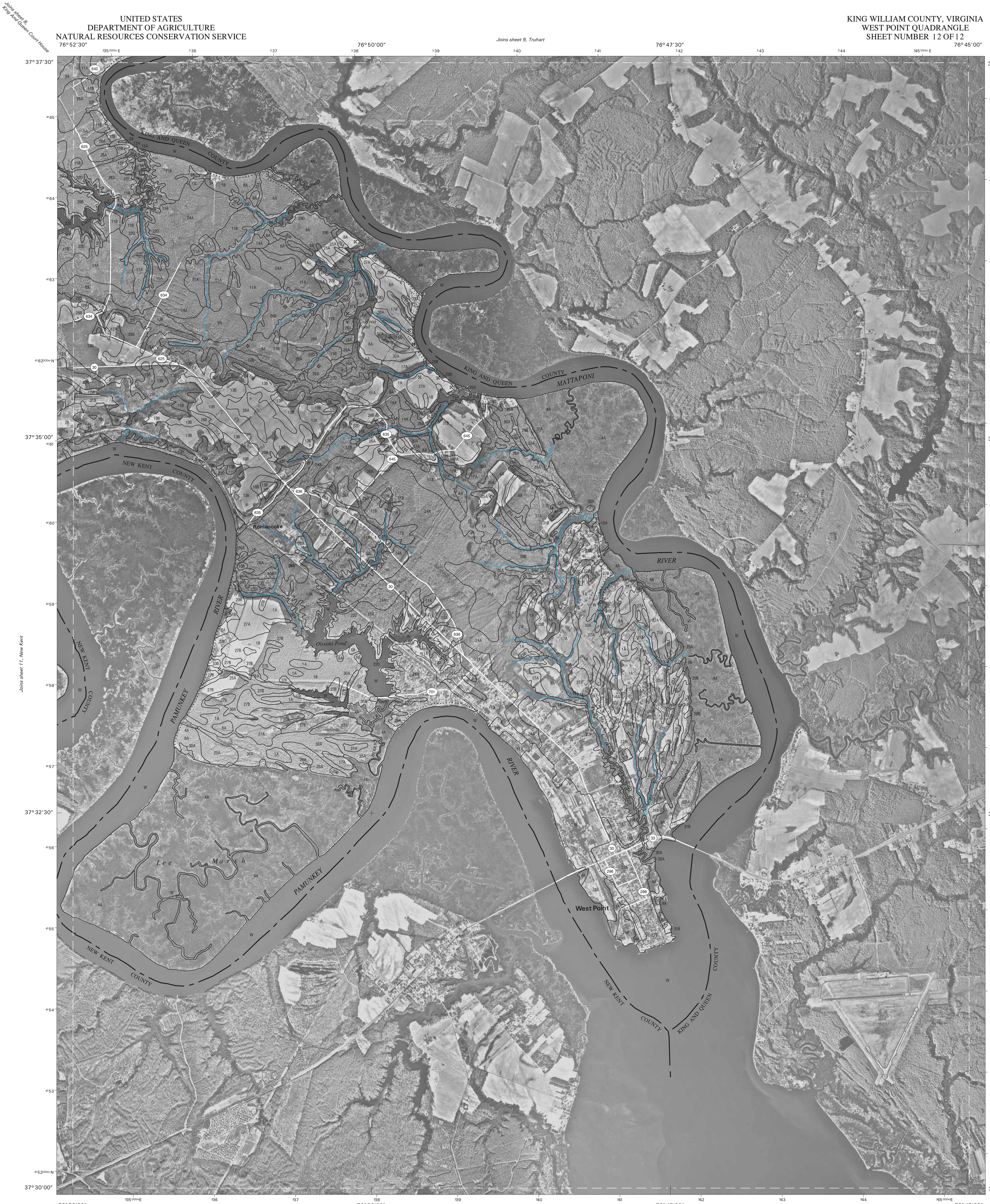
NATURAL RESOURCES CONSERVATION SERVICE

KING WILLIAM COUNTY, VIRGINIA
WEST POINT QUADRANGLE
SHEET NUMBER 12 OF 12



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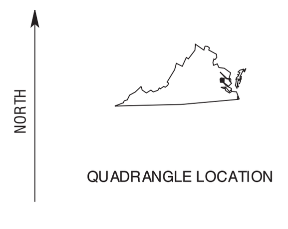
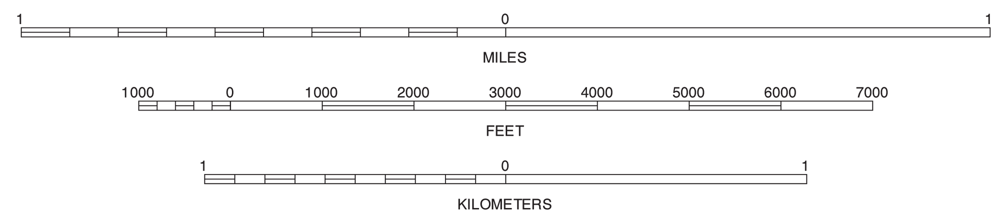


QUADRANGLE LOCATION

SCALE 1:24000



8	9	
11		

8 KING AND QUEEN COURT HOUSE
9 TRUHART
11 NEW KENT

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WEST POINT, VIRGINIA

7.5 MINUTE SERIES
SHEET NUMBER 12 OF 12

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